NATIONAL MUSEUM OF VICTORIA

THE JOURNAL of The Department OF AGRICULTURE

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Contents.

MAY, 1939

		PAGE
Irrigation at Kerang	*E. T. Beruldsen, B.Sc. (Agric.)*	209
"Victoria" Red Poll Cattle	*A. C. T. Hewitt, M.Agr.Sc.*	213
The Cabbage Butterfly	*R. T. M. Pescott, M.Agr.Sc., F.R.E.S.*	218
Silver Leaf Disease of Fruit Trees	*A. T. Pugsley, B.Agr.Sc.*	220
Horse Breeding	*R. N. Wardle, B.V.Sc.*	222
London Markets		225
Registration of Stallions	*R. J. de C. Talbot, B.V.Sc.*	226
Potato Manuring—The effect of Ammonium Sulphate	*J. T. Ramsay*	228
Spaying of Animals	*W. D. Shew, G.M.V.C., B.V.Sc.*	231
Acidity of Victorian Butters	*R. N. Trembath, B.Agr.Sc. and F. S. J. Newman, B.Agr.Sc.*	233
Wireless Talks for Farmers		241
Red Scale of Citrus—Second Progress Report	*C. J. R. Johnston, B.Agr.Sc. and T. W. Hogan, B.Agr.Sc.*	242
Butter Production and Export		256
Orchard and Garden	*A. W. Jessep, M.Agr.Sc., B.Sc., Dip. Ed.; and J. L. Provan, B.Agr.Sc.*	257
List of Stallion Registrations and Time Table of Parades		See Supplement

Issued by direction of the Hon. E. J. Hogan, M.L.A., Minister of Agriculture.

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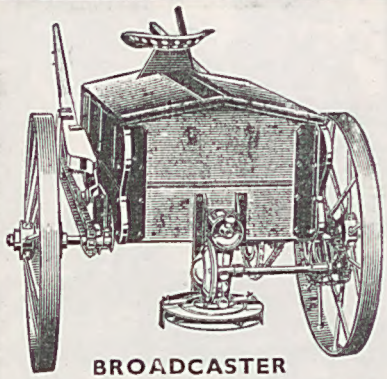

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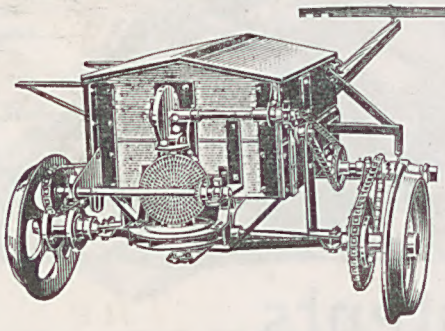

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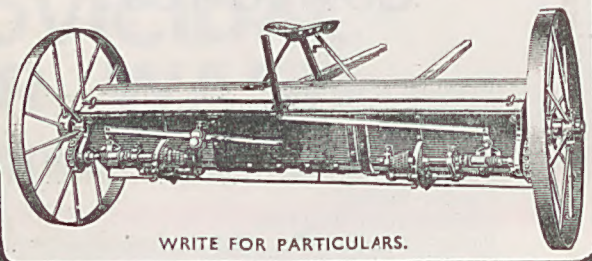

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INDEX TO ADVERTISEMENTS

FRONT SECTION

Gippsland and Northern Co-operative Coy. Ltd. (Seeds) vi

Goodyear Tyres ... ... opp. p. 218

H. V. McKay Massey Harris Pty. Ltd. ... iii

International Harvester Coy. of Australia Pty. Ltd. (Tractors) v

Law Somner Pty. Ltd. ... ... opp. p. 219

Leggo, Victor, & Farmers Ltd. ... inside cover

Neptune Oil Co. Pty. Ltd. iv

Robinson, T., & Coy. Pty. Ltd. ii

The "Yorkshire" Insurance Co. Ltd. opp. p. 226

Vacuum Oil Coy. Ltd. ... ... opp. p. 227

BACK SECTION

Australian Cement Ltd. ... ... inside cover

Cockbill, J. xi

Commonwealth Oil Refineries Ltd. ... vii

Davis Gelatine Pty. Ltd. (Tri-cal-os) opp. p. 251

General Motors-Holden's Ltd. (Bedford) outside cover

Gerrard Wire Tying Machines Co. Pty. Ltd. ... ... opp. p. 251

Hardie, James & Co. Pty. Ltd. viii

Lane's Motors Pty. Ltd. (Allis-Chalmers Tractor) ... ... opp. p. 243

Lever's Key Meal ... ... opp. p. 242

Lysaght Bros. & Coy. Pty. Ltd. xi

Nursery Stock (A. G. Nightingale & Co.) ... xi

Rylands Bros. (Aust.) Pty. Ltd. ix

State Savings Bank ix

Stud Breeders' Cards x

Sulphate of Ammonia ... ... opp. p. 250

Trewhella Bros. Pty. Ltd. x

Victorian Railways xii

White Leghorns for Sale (H. Hill) ... x

Wills, W. D. & H. O. (Aust.) Ltd. (Havelock Tobacco) viii

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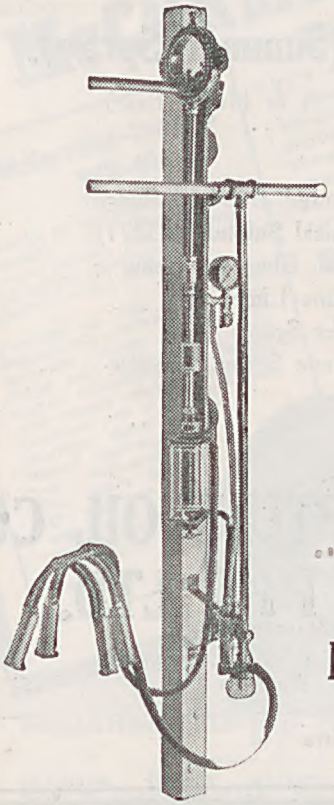

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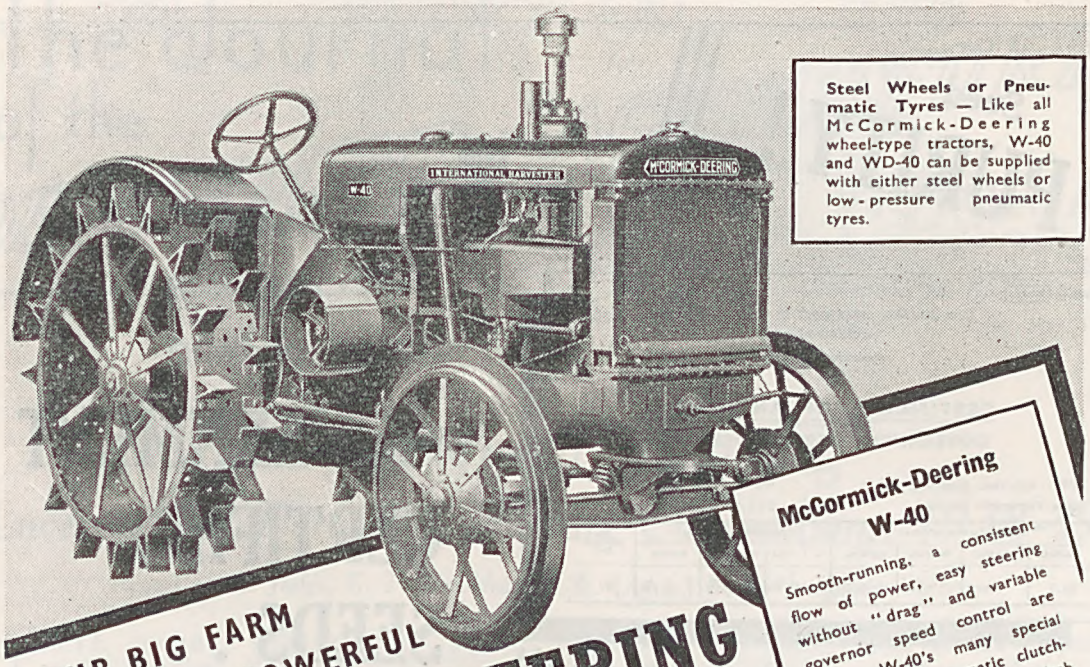

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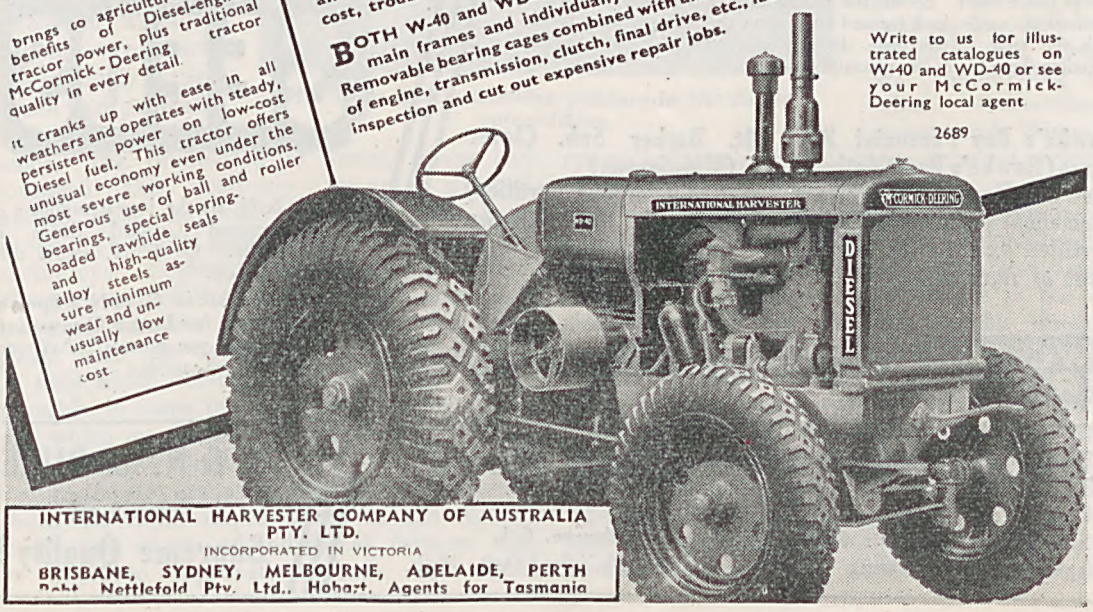

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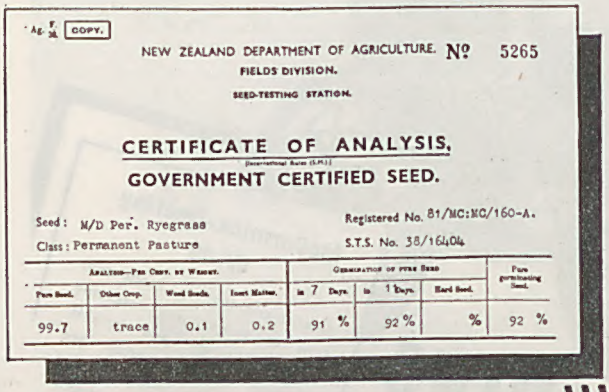

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The Journal of the DEPARTMENT of AGRICULTURE of VICTORIA

Journal of Agriculture, Victoria—May, 1939.

Irrigation at Kerang

Lucerne and Perennial Pasture Competitions, 1938-39

Report of the Judge, E. T. Beruldsen, B.Sc. (Agric.) Senior Irrigation Officer

UNTIL recent years irrigation at Kerang has been associated largely with the production of annual fodder crops, and perennial crops, such as lucerne, occupied a relatively small area. The farms themselves are fairly extensive in area and consequently the refined methods of irrigation commonly encountered in more closely settled districts were generally conspicuous by their absence. The production of annual crops had encouraged this tendency towards slipshod methods, since elaborate grading would have been too big a charge against the cost of production of such crops. Neglect to use fertilizer, indifferent grading, poor facilities for surface drainage and consequent excessive watering of certain areas together with the cultural difficulties associated with soils which though fertile are often rather intractable, in many instances have produced bad effects which may take years of costly rehabilitation processes to eliminate.

Mr. Glen Hall's winning pasture in the Kerang competition.

During the last few years it has been a pleasure to note the rapid improvement in the district through the efforts of individual farmers who have employed approved methods, and whose lead in this direction has been followed by many others. The area under annual forage crops is being reduced rapidly, although even during the present season it was estimated that approximately 20,000 acres of summer forage crops, millet, Sudan grass, ambercane, imphee, &c., had been grown in the Kerang and surrounding districts. Subterranean clover and Wimmera rye-grass pastures, lucerne and pastures of perennial species are replacing the annual crops, and this has been accompanied by a tremendous increase in top-dressing with superphosphate. Superphosphate and subterranean clover have given the biggest impetus to the general improvement in the district, since the first ventures in this direction proved so remarkably successful in the rehabilitation of certain areas. Also, farmers were attracted to this annual type of permanent pasture since it could be established over large areas relatively cheaply and the waterings necessary for its maintenance were comparatively few. This economy in watering meant that that there was only a slight possibility of permanent injury to the paddock if the grading was not exactly

Fodder reserves on the property of Messrs. Wilkinson and McDonald who gained first and second places in the lucerne section.

perfect. It was only a step further on the road to better methods to find farmers who were desirous of establishing permanent paddocks for summer grazing preparing land carefully for the sowing down of lucerne and pastures of perennial species which would respond to summer irrigation, and which, together with the Subterranean clover—Wimmera rye-grass mixture, would give a continuous supply of green feed throughout the year. Both lucerne and pastures of perennial species required more careful preparation in the matter of grading and the provision of facilities for getting rid of excess water, especially since such a large proportion of the land has characteristically flat contours, and an even distribution of the water with little or no excess after an irrigation was an essential factor governing successful establishment and maintenance.

Improvement in the district had reached a pitch where the council of the Kerang Agricultural Society felt justified in inaugurating Lucerne and Pasture Competitions this year with the object of still further stimulating local interest in the great potentialities of permanent irrigated crops. Benefiting by the experience of other Agricultural Societies which have conducted similar competitions for some years, the rules or conditions of the competitions were laid down along sound lines. In more closely settled areas it is not very difficult for a competitor to exhibit a whole paddock of lucerne or pasture since he may have a number of paddocks sufficiently small to be able to choose one which presents a uniform and attractive appearance. With the larger farms and consequently larger paddocks obtaining in the Kerang district, it is difficult and almost impossible for a competitor to exhibit a whole paddock which might be up to exhibition standard, as the chances of irregularities occurring in a large area are much greater than in a small area. Further, the detailed inspection of numerous large paddocks would unduly prolong the time taken in judging. Accordingly, a minimum area was agreed upon but this minimum area had to include a complete section of the irrigation system. This stipulation was to prevent an exhibitor from choosing 3 acres or so in the centre of a paddock on which growth was uniformly good, but which excluded a supply channel or a drainage channel which might have undesirable features.

The competition was divided into three sections, viz., lucerne, permanent pasture of perennial species and permanent pasture of annual species. There were to be two inspections in each section, the first inspection occurring in spring. Lucerne and perennial pastures were to be inspected for the second time in February, when any defects due to faulty grading or neglect in watering might be expected to show up, and the second inspection of the annual type pastures was to take place in May. This report covers the judging of the first two sections only, a final inspection of the annual pastures having still to be carried out.

The fact that a total of 22 entries was secured in the inaugural competition must be very gratifying to the Kerang Society, and judging by the interest shown, much keener competition may be expected in future.

The quality of the exhibits, particularly in the lucerne section, generally was very good considering the adverse season. Although the Kerang

Mr. C. H. McDonald's lucerne field.

district has been singularly favoured this year compared with other Northern irrigation areas in the matter of water supply, no amount of irrigation appeared to compensate entirely for the almost total absence of rain till the end of February. The intense heat combined with abundant irrigation appeared to suffice for the development of summer fodder crops, which generally were excellent throughout the district, but reacted unfavourably on the pastures and to some extent on the lucerne.

A fine crop of maize grown by Mr. C. H. McDonald.

In the case of the pastures this adverse effect was accentuated generally by too severe grazing and consequent exposure of too great a proportion of bare ground to the action of sun and wind. The soils generally crack very freely on the surface, and this increased the evaporation of moisture and rapid drying out of the pastures. If it had been possible to treat the pastures more leniently in the matter of grazing a sufficient cover would have been formed to minimize evaporation and better and denser swards would have resulted helping to bind the soil surface and prevent excessive cracking. Greater production from pasture plants will be achieved if they are permitted a proper recuperation period of from three to four weeks and are not being continually exploited by the grazing animal. Further, the herbage from pasture treated in this manner will be better balanced in respect of its fodder constituents with resultant benefit to the health of the animals.

The often repeated contention that irrigated pastures are very disappointing from the point of view of fattening stock compared with lucerne is disproved when the proper pasture management is carried out. In grazing lucerne, the farmer would not consider putting the stock on until the lucerne was fairly mature, that is until the lucerne is beginning to come out in flower, because he is aware of the dangers involved from "bloat," &c., in grazing immature lucerne. Now, lucerne which is coming out in flower must have been growing for at least four to five weeks, and at that stage of the plant's growth analysis shows that as a fodder it is almost perfect for stock. Why are pastures treated differently and too often "flogged" by the stock at short intervals?

In searching for an answer to this question, one finds that farmers, particularly sheep farmers, are obsessed with the idea that the "short bite" is the ideal since the stock themselves appear to concentrate on patches of short succulent grass. This is a clear case of the wrong deductions being made from correct observations. Because children demonstrate an avidity for sweets parents do not conclude that these should form the staple diet of children. If such were the case very few children would remain in good health. Correspondingly, the rather high incidence of various stock diseases on improved pastures may be attributed largely to the aggravating influence of an unbalanced diet.

Actually, very short green herbage is too rich for the grazing animal and unless supplemented with some material or roughage which will dilute the ration will cause digestive disorders which may undermine the animal's resistance to disease. In the case of worm infestation the chances of the animals becoming re-infested after treatment are very much greater on a very short pasture than on a pasture where the herbage is allowed to reach a reasonable length. The conservation of hay whether pasture, lucerne or cereal, for feeding to the stock during the winter months when green feed is necessarily short is an important factor in good pasture management. It has been proved that even when ample pasturage is available at this time of the year the feeding of a carbohydrate-rich supplement has definite advantages from the point of view of animal health and the normal progressive development of the young growing animal. It was a pleasing feature of the inspections at Kerang to find that all the competitors appreciated this aspect of fodder conservation and to note the numerous stacks of hay on hand.

During the inspection in February it was noted in several cases that lucerne stands had suffered in small areas through the season having required

very frequent irrigation to maintain growth. A certain amount of "scalding" had resulted. Apart from this, the exhibits in this section of the competition were of a high standard and were a tribute to the good methods of the farmers concerned.

Probably one of the most effective advances made by the competitors was in the liberal use of superphosphate. Up to 4 cwt. per acre in one year had been applied to lucerne or to perennial pastures and the general practice was to apply two bags per acre per annum. The annual type pastures regularly received one bag per acre each year. This liberality in the use of superphosphate must bring its own reward in the continued improvement in both yield and quality from these irrigated crops. One of the greatest troubles in the district is the invasion of lucerne stands and pastures by "windmill" grass and there was no doubt that top-dressing was responsible for keeping this pest in check by the better growth of the lucerne or good pasture species.

As regards the lay-out of the paddocks, one could have wished for more refinement in some cases. Too many of both the supply and drainage channels were too deep, and consequently too much "dead water" accumulated. Any advantage that this water might have had in providing water for stock between irrigations was more than offset by the fact that these channels take up too great a proportion of the paddock, cannot be grazed over by the stock, and constitute a harbour for all kinds of undesirable weeds which later intrude on the lucerne or pasture. Apart from the main supply channel on the property which may have to be excavated it is a much better procedure if in the case of the laterals to the various paddocks sufficient material to make the banks is transported to the required position in the first instance when the paddocks are being laid out for irrigation. By splitting this material with the delver a channel is formed with the bottom on the same level as the ground to be irrigated. This ensures that the channel can be drained out at the completion of each irrigation. Good pasture species or even lucerne will grow in such channels which have no "dead water," and the stock will graze them regularly and keep weeds in check.

Although the grades in most paddocks inspected were fairly flat it was considered that most of the bays were too wide, and could have been reduced to two-thirds of a chain in width with advantage. On country with a fair fall bays one-half chain wide are ideal.

A vigorous lucerne stand. (Messrs. Wilkinson and McDonald.)

Lucerne Awards.

First and second places in the lucerne section were obtained by two exhibits entered by Messrs. Wilkinson and McDonald, Summer Hill. Both were excellent stands of lucerne which had been established on rising Mallee ground which merged into the plain at a lower level. The loamy nature of the soil on the rising ground was ideal for lucerne growing, and the excellent drainage facilities which had been constructed by Mr. Wilkinson in the depressions obviated any possibility of trouble with excess water. The stand on exhibit B was dense and uniform, the uniformity being marred only slightly by the shorter growth where the soil was of a stiffer nature at the bottom of the bays. After the spring inspection nearly 30 cwt. of prime lucerne hay per acre was cut from this area. The stand was very free from weeds at both inspections. At the inspection in February the growth was not so advanced and the stand was just due for another watering. The area had been well laid out in half-chain wide bays which were very level from side to side and had an ideal fall. Sowing had been carried out in August, 1937, with 10 lb. seed and one bag of superphosphate per acre. The early history was not encouraging since the area had to be irrigated to germinate the seed and after a short interval watered again to bring the seedlings through. In 1938 the stand was top-dressed with two bags of superphosphate per acre and shortly before the second inspection in February another bag had been applied. Part of the area which has inferior soil was given a double dose of manure, and there was evidence to show that this dressing had had the effect of bringing the fertility level nearer that of the better class soil.

(*Continued on page 238.*

"Victoria" Red Poll Cattle

High Standard Maintained

By

A. C. T. Hewitt, M.Agr.Sc.,
Dairy Herd Manager,
State Research Farm, Werribee

Victoria Maid Marion—435 lb. butter-fat as a junior three-year-old.

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THE Red Poll, the only hornless breed of English cattle, resulted from the skilful mating, over a period of more than 125 years, of the old Norfolk and Suffolk cattle. From this mating was evolved an excellent type of animal, combining the deep red colour and beef-producing qualities of the Norfolk with the polled characteristic and milk and butter-fat producing qualities of the Suffolk.

From the point of view of quality and quantity of milk produced the breed has always borne a good reputation, and in Australia this reputation has been strengthened by the performance of the "Victoria" herd of Red Polls conducted by the Department of Agriculture at the State Research Farm, Werribee, during the past 30 years. The average production of the 491 cows tested in this herd during the last eleven years has been no less than 7,360 lb. milk, 4·38 test, and 320 lb. butter-fat, equivalent to 400 lb. butter-fat after adding the allowances for heifers.

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Red Polls commence to make good right from the start. The birth weight of calves at Werribee has averaged 77 lb. for bull calves and 72 lb. for heifer calves. These calves can be developed into prime vealers, prime baby beef, or prime mature beef, while the heifers can also be developed into good dairy cows or good mothers for rearing calves. At Werribee, the aged cows that are retained for breeding purposes are often allowed to rear calves. Many of these cows are fifteen years old, and they always rear two, and frequently three, calves at once.

Red Polls are extremely docile animals and respond to kind treatment. The bulls are easily handled, and the cows are quiet to milk. The breed, which is now very popular and widely distributed, is particularly suited to the mixed farming and lower rainfall districts of Victoria, in fact, to all Australia.

In this short article it is proposed to deal briefly with the effects of breeding and selection on increased milk and butter-fat yields, the material for this study having been

obtained from the Werribee herd already referred to, the figures for which speak highly for this dual purpose breed. The breeder of other types of dairy cattle has dairy characteristics only to consider when making his selections, but the Red Poll breeder has to have as his objective an animal suitable for the butcher as well as giving satisfactory milk and butter-fat yields. This necessitates the culling of both the lean, heavy producing dairy types, and the fat, low-producing beef types of animals that are apt to occur. If this culling were not done, a herd would tend to lose the dual purpose characteristics for which the Red Poll is so justly famed.

The departmental Red Poll herd was founded in 1909 by the late Dr. S. S. Cameron, a former Director of Agriculture. Since its foundation, all the cows have been under test, and to-day there are 900 milk and butter-fat records from 340 cows. Red Polls, as they are known in Australia to-day, were not to be obtained in 1909, and it was extremely difficult to buy good representatives of the breed. To found the State Research Farm herd, 105 Red Poll females and six bulls were purchased. Very little was known of the productive ability of these foundation cows, and scientific selection and breeding were commenced early. Before they were bred from, 35 cows out of the original 105 foundation cows were weeded out, and gradually others that were poor producers themselves or that were failing to transmit high milk and butter-fat production to their progeny were eliminated from the stud. The results have been such that to-day the whole herd of approximately 140 head includes the direct descendants of only ten of the original 105 foundation cows.

A statistical survey of the test records shows that the original ten foundation cows produced an average return of 359 lb. butter-fat, compared with an average of 335 lb. butter-fat produced by all the foundation cows tested. In each subsequent generation that has followed from the ten foundation cows, gradual increases in production have been obtained, and to-day the majority of the cows are in the sixth, seventh, and eighth generations. The average production of these cows is 420 lb. butter-fat, or 25 per cent. more than was produced by the ten foundation cows.

Victoria Volt—537 lb. butter-fat.

Careful selection and culling have been carried out continuously, and it has been found that the average production of these culls has varied very little, being about 350 lb. butter-fat, just 15 lb. above the average production of the 105 foundation cows.

This survey of the production records of a pure-bred herd over a period of 30 years emphasizes the need for continual herd testing, so that the breeder is always able to weed out the lower producing cows. Should a dairy herd not be culled continuously according to the production records of the cows, it would tend to revert to the basal level of production for the breed under the conditions to which it is subjected. At Werribee, this level would be in the vicinity of 300 lb. butter-fat.

Another statistical survey of the records of the departmental Red Poll stud has shown that certain bulls increase, while other bulls decrease, the production of their daughters above or below that of the dams of these daughters. The bulls that increase production are known as proven sires, and such bulls are necessarily six to seven years old before their value is known. Very few proven sires are alive in Victoria to-day, since most bulls reach the chopping block before they are five years old. If a bull is worth selecting as a herd sire, and if his calves are satisfactory, he is well worth keeping until his daughters are herd-tested, when the progeny test can be applied. Bulls that pass this test and become proven sires should be used for stud purposes as long as possible. If properly cared for, bulls remain active and good calf getters until they are twelve to fifteen years old. At Werribee, Belligerent and Vice-Regal were used successfully for stud purposes until they reached the ages of fourteen and twelve years respectively. Proven sires in the Werribee herd are Nicotine, Belligerent, Victoria Volcano, Victoria Air Marshal, Longford Major, Earl of Beaconsfield, Victoria Vice-Captain, and Woodburn Peter Pan, and now the descendants of these bulls are being inbred to accentuate the desirable

characters that they transmitted to their progeny. A bull that fails in the progeny test should not be bred from further.

The selection of a herd sire requires judgment and thought, and if a proven sire is unprocurable it will be best to select a strong vigorous young bull that conforms with the standards for the breed so far as his type is concerned. Not only should his dam be a high producer herself, but she should have also high-producing daughters. His sire also should have high-yielding daughters.

It has been demonstrated that the method of breeding plays an important part in the production of a herd. Once the highest producing strains have been segregated, these high-producing strains should be line-bred with occasional outcrossing to maintain vigour and constitution. "Line-breeding" is inbreeding with distinctly but distantly related animals, and in the Red Poll stud at Werribee increased production has been obtained by this method, "Close-breeding" is inbreeding with closely related animals, such as brother and sister or parent and progeny, while "outcrossing" is breeding with unrelated animals. By close-breeding, milk and butter-fat production have been lowered at Werribee. A heavy producing cow must be vigorous and have a strong constitution, and since loss of vigour and weakness of constitution are associated with close-breeding, this method should be avoided.

The success attained with Red Polls at the State Research Farm, Werribee, in raising the average butter-fat production of the herd by 85 lb. butter-fat per cow in 30 years to the present standard of 420 lb. butter-fat, is attributed mainly to the following factors:—

(1) Continuous herd-testing, so that the breeder knows exactly what each cow is producing;

(2) The selection of the most desirable and highest producing cows for breeding purposes;

(3) Culling all the low-producing, undesirable cows and strains as soon as they can be replaced by heifers from the higher producing cows;

(4) Line breeding with the high-producing strains;

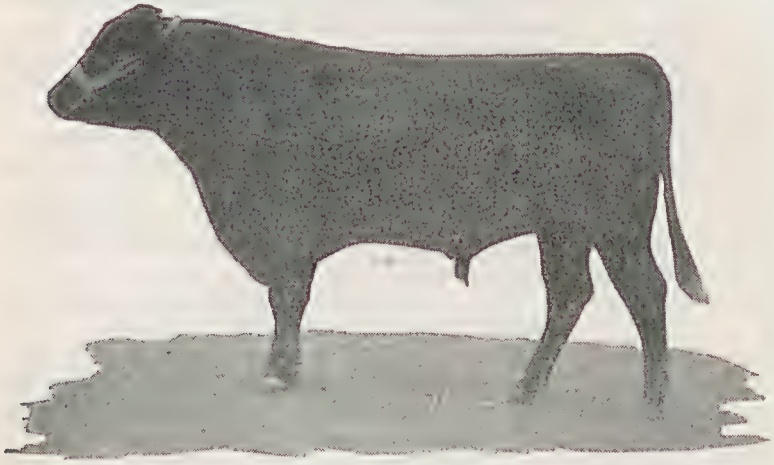
(5) The selection of suitable herd sires, and the increased use of proven sires; and

(6) Occasional outcrossing to maintain vigour and constitution.

It might be thought that milk and butter-fat production in Red Poll cattle would be increased only at the expense of beef production, but this is not the case when proper selection is carried out. It is not economic to produce milk and beef from the one cow at the same time, hence heavy milking cows lose condition as their lactations advance and fatten up quickly when they are dry. Again, heavy milking cows must consume large quantities of feed from which to produce their high milk yields. The consumption of these large quantities of feed increases the size of their barrels. These large barrels, together with the large udders, make the heavy producing Red Poll cows typically wedge-shaped as they reach maturity as in other dairy breeds. Nevertheless the Red Poll calves, steers, heifers, and the bulls carry good condition, and can be topped off for the butcher very quickly, and are typically rectangular like true beef cattle.

The New Herd Sire.

With the object of maintaining the high standard already reached in the "Victoria" stud of Red Poll cattle at the State Research Farm, Werribee, the Department of Agriculture has recently purchased a new herd sire, Burnwood Masterpiece, from Mr. John McIntosh, "Burnwood," Merrigum. This bull is bred from the best and highest producing cattle imported into Australia for the late Hon. T. H. Payne, "Woodburn," Kilmore, by Mr. McIntosh, the former manager of "Woodburn".



Burnwood Masterpiece.

Both the paternal and maternal granddams of Burnwood Masterpiece were imported from the Marsden stud of Mrs. M. M. Fitzgerald, Marsden Manor, Circencester, England, a stud noted for its ideal dual-purpose characteristics, successes at the

Royal and County Shows and particularly high milk and butter-fat production. At the Marsden dispersal sale in 1931, the 94 head of cattle offered averaged £64 a head, the maternal granddam of Burnwood Masterpiece, Marsden Mimulus, topping the sale at 230 gns. while her yearling bull realised 200 gns., and her bull calf 160 gns.

Although only on her first lactation, Marsden Mimulus secured fourth prize in the English Royal Show Milking Trials in 1930 against all breeds. In Australia, she won the champion prize for females at the Melbourne Royal Show in 1932, and produced 706 gallons of milk and 312 lb. butter-fat in 160 days at Woodburn prior to her importer's death. Marsden Mimulus is by Marsden Mars, which was the first Red Poll bull to be accepted by the English Ministry of Agriculture's register for Dairy Cattle. At the Marsden dispersal sale, Mr. J. G. Gray, Coombe Abbey, Coventry, who judged at the Melbourne Centenary Royal Show in 1934, purchased the eight-year-old Marsden Mars for 105 gns. Numerous heifers, as well as the dam and granddams of Marsden Mars produced from 1,200 to 1,500 gallons of milk during different lactations.

The new sire is by Woodburn Wiseman, which was champion at the Melbourne Royal Show in 1937 and reserve champion in 1936 and 1938. Woodburn Wiseman is by Whiteway Wiseman and from Marsden Maryland, which produced 490 lb. butter-fat in 273 days at Woodburn as a four-year-old (Association Test).

Burnwood Masterpiece will be mated principally to heifers by the Department's present herd sire, Woodburn Peter Pan. This mating will bring together blood, not only from the Department's own high producing strains, but from the best of the stock more recently imported into Victoria. Some line-breeding will be effected because Peadowns Pierrot is the sire of Woodburn Peter Pan and the grandsire of Burnwood Masterpiece, and Gressenhall Rosebloom's Hero is the maternal grandsire of Woodburn Peter Pan and one of the great-grandsires of Burnwood Masterpiece. Further, blood of Whiteway Wiseman, which is by a former well known English bull, Necton Gloucester, will be introduced for the first time into the "Victoria" stud.

The herd sire, Woodburn Peter Pan, has proved himself to be one of the most outstanding sires of any breed in Australia, since his progeny are evenly good Red Poll types and consistently high milk and butter-fat producers. Already 20 of his daughters have actually averaged 6,871 lb. milk, 4·45 per cent. test, and 303 lb. butter-fat in 273 days on their first lactations, the best being Victoria Richmond, which produced 8,210 lb. milk, 4·76 per cent. test, 391 lb. butter-fat as a junior-two-year-old. His production index is 10,920 lb. milk, 4·26 per cent. test, and 475 lb. butter-fat, indicating that his daughters are producing 41 lb. more butter-fat than their dams. There has also been a keen demand for his bull calves and already 43 have been sold for stud purposes, as well as a number of his daughters and six of his grandsons.

In producing 15,672 lb. milk, 4·61 per cent. test, 723 lb. butter-fat in 273 days, Marsden Mindful, the dam of Woodburn Peter Pan, holds a world's unofficial record for a Red Poll cow. Victoria Donald, a bull by Woodburn Peter Pan, was champion at the Adelaide Royal Show in 1937. He was exhibited by Mr. W. A. Bennett Cobham, Morphettville, South Australia.

History of "Victoria" Stud.

The "Victoria" stud of Red Poll cattle was founded in 1909, and, between 1909 and 1914, 103 females and four bulls were purchased. These purchases included the imported bulls Longford Major, 10445, (55 AA), bred by the Earl of Radnor, Longford Castle, Salisbury. England and Belligerent, 11096 (8 AA), bred by Mr. C. F. Newton, Saham Toney, Norfolk, England, and the imported cows Primrose League, 22723 (1 AA), and Velveteen, 22875 (2 AA), bred by the Marchioness of Graham, later the Duchess of Montrose and a president of the Red Poll Cattle Breeders' Society of Great Britain and Ireland.

At the Melbourne Royal Show the "Victoria" Red Polls have won a large number of prizes, including no fewer than eight championships, six reserve championships and 31 first prizes for bulls, and seven championships, ten reserve championships, and 61 first prizes for cows, while 116 other prizes have been won, including the Stradbroke Cup on two occasions, and a second and third prize in the Weekly Times champion milk and butter-fat test, open to all breeds.

When the departmental herd was founded Red Polls as they are known in Australia to-day did not exist, but by careful breeding and selection the dual-purpose characteristics of the Red Poll in the "Victoria" stud were so successfully improved that breeders and farmers became intensely interested, and as a result the breed has developed rapidly.

In the breeding of the Red Polls at Werribee considerable attention has been paid to the development of the milking function, the average production of the herd in the Standard Herd Test during the past eleven years being 7,360 lb. milk, with an average test of 4·38 per cent. butter-fat, or 320 lb. butter-fat. With the usual allowances for heifers, the average for the 491 cows tested is 400 lb. butter-fat.

Woodburn Peter Pan.

Since 1914, the only additions to the stud have been two cows in 1925, which were later eliminated, and the four bulls, Dominion Bright Belgian in 1929, Woodburn Peter Pan in 1933, Chandpara Valentine in 1934, and Burnwood Masterpiece in 1939. From 1914 on, the Department had been breeding from the four original bulls, Tabacum, Nicotine, Longford Major, and Belligerent, and line-breeding with their descendants, no outside blood having been introduced until 1933. In 1929, a bull for outcrossing was needed, but as no suitable outbred bull was available at the time, Dominion Bright Belgian was purchased from the New Zealand Government. This bull was a grandson of the imported bull, Gresham Masterful (imp. N.Z.) 12631, (1046 AA), bred by Lieut-Colonel R. C. Batt, Gresham Hall, Norwich, England. All Dominion Bright Belgian's other ancestors were descended from stock exported from the "Victoria" stud to the New Zealand Government in 1918. When buying Dominion Bright Belgian, the Department really bought a bull with 75 per cent. of the "Victoria" stud's blood, his introduction and use in this stud being what is known as a "climatic outcross".

Prior to the purchase of Woodburn Peter Pan in 1933, all the females in the stud were related to the four stud bulls then in use and the effects of close breeding were somewhat in evidence. The use of Woodburn Peter Pan was a distinct outcross and has proved beneficial, as has already been shown.

In 1934, Chandpara Valentine was received on loan from Dr. Arnold Caddy, owner of the Chandpara Stud, Tylden, Victoria. Chandpara Valentine was Champion at the Melbourne Royal Show in 1933 and 1934, Reserve Champion in 1931 and 1932, and is by the "Victoria" bred, proven sire, Earl of Beaconsfield. The use of Chandpara Valentine has introduced line-breeding to Longford Major and Primrose League blood.

Burnwood Masterpiece, the new herd sire, is a well grown two-year-old of excellent type, being deep cherry red in colour and having a level top line and length of body as well as lengthy, nicely finished hindquarters. In 1937, he won first prize at the Melbourne Royal Show in the class for bulls under 10 months old. His type and quality have improved with subsequent development. Although never herdtested, his dam, Woodburn Mimulus, is a very nice type of cow with shapely udder and teats, showing productive capacity.

PRODUCTION, RED POLL HERD, SINCE 1927–28.

Year.	Number of Cows in Test.	Milk.	Test.	Butter-fat.	Butter-fat lb. with Allowances for Heifers.
		lb.	%	lb.	
1927–28 ..	42	6,911	4·55	314·61	411·21
1928–29 ..	41	8,547	4·23	361·85	418·33
1929–30 ..	34	8,782	4·40	381·99	443·11
1930–31 ..	41	7,781	4·41	338·11	442·75
1931–32 ..	37	7,342	4·45	323·79	399·31
1932–33 ..	41	6,954	4·56	315·02	388·69
1933–34 ..	39	6,868	4·59	313·13	387·40
1934–35 ..	47	6,702	4·38	294·11	381·86
1935–36 ..	54	6,814	4·37	298·46	378·42
1936–37 ..	60	6,983	4·13	288·22	370·05
1937–38 ..	55	7,668	4·26	325·74	404·15
Average for eleven years, 491 cows..		7,360	4·38	320·41	399·89

[*Continued on page 224.*

The Cabbage Butterfly

(*Pieris rapae* L.)

By R. T. M. Pescott, M.Agr.Sc., F.R.E.S., Entomologist

TOWARDS the end of March of this year two specimens of the Cabbage Butterfly (*Pieris rapae* L.)—were captured flying around flowers in the grounds of the University of Melbourne and at Canterbury. This is the first occasion on which this pest of cabbages and cauliflowers has been recorded in Victoria, and almost certainly in Australia. The following account of this pest and its habits should enable vegetable growers to more easily recognize it if it becomes established in this State. Growers are asked to immediately communicate with the Department of Agriculture if they suspect that this insect is present on their property.

Plants Attacked.

The cabbage butterfly caterpillars attack all vegetables of the cabbage family—cabbages and cauliflowers particularly, and, to a lesser extent, turnip, kale, radish, mustard and horse radish. Flowering plants such as stocks, and weeds such as charlock and shepherd's purse are also attacked.

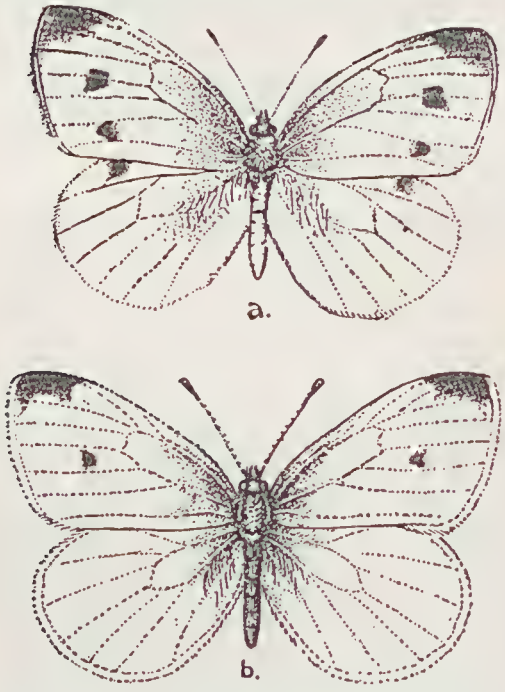


Fig. 1.—The cabbage butterfly—(a) female, (b) male.
[U.S. Dept. Agric.

Fig. 2.—An immature cabbage head, showing injury by grubs feeding within.
[U.S. Dept. Agric.

Nature of Injury.

The caterpillars of this pest commence work at the beginning of the season, damaging early plants. After riddling the outer leaves, they attack the tender inner leaves as they form, frequently feeding within the immature heads and rendering the cabbage unfit for food because of the abundance of dark-green excreta which they form. In cool weather, the caterpillars often feed freely exposed on the surface of the leaves in the sunshine. Frequently they work

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into the centre of the cabbage, attacking the undeveloped "heart" and rendering the head worthless for market. Seedling cabbages grown in cold frames are often damaged shortly after they are placed out in the field, the caterpillars cutting into the "bud," and thus destroying the future head. Injury of this nature may be serious, many plants being a complete loss.

Description and Life History.

Butterfly.—The butterfly is white, marked with black near the tops of the forewings, and has a wing spread of up to 2 inches. The female (see Fig 1A) has two conspicuous spots on each forewing, whereas the male (see Fig. 1B) has one only. The underside of the hindwing is of a uniform straw-yellow colour of satiny appearance, and in both sexes there is usually an indistinct black spot near its tip. The body of the female is whitish; that of the male is usually darker on the back. The male is smaller than the female.

Eggs.—The eggs are spindle shaped, pale-yellow in colour, strongly ribbed and are laid singly, usually on the underside of the outer leaves of cabbage and other plants.

Caterpillar.—The caterpillar is velvety-green in colour and very similar to the colour of the plant on which it is feeding. There is a faint yellow stripe down the middle of the back, and a row of yellow spots along each side in line with the breathing pores. The surface of the body is somewhat rough and finely dotted with small black spots. It measures, when fully grown, about $1\frac{1}{4}$ inches in length.

Chrysalis.—When the caterpillar becomes fully grown, it attaches itself to a cabbage leaf or other nearby object by means of a thread-like girdle of silk and then turns to the chrysalis which measures about $\frac{3}{4}$ inch long, varying in colour from dirty-grey to yellow, green, or dark-grey. The butterflies commonly fly to garden flowers sucking up nectar, or they may be seen hovering over the flowers. The butterfly is active by day, being on the wing from early morning until near dusk. It is a comparatively slow but tireless flier, being capable of journeying long distances.

Remains of cabbage leaf eaten by cabbage grubs. [U.S. Dept. Agric.

Control.

According to American authorities this cabbage caterpillar is not difficult to control if proper remedies are used as soon as damage is detected and before the grubs become too abundant. The most satisfactory method appears to lie in the application of arsenical dusts or sprays as are commonly used for the control of the cabbage moth caterpillar.

REFERENCE.

Chittenden, F. A.—"The Common Cabbage Worm and Its Control." U.S.D.A. Farmers' Bulletin 1461, 1926.

Silver Leaf Disease of Fruit Trees

Control Measures Recommended

By A. T. Pugsley, B.Agr.Sc., Assistant Plant Pathologist

SILVER Leaf has been known to occur in this State for a number of years. It has been recorded from widely separated districts, but in a few instances only does it seem to have established itself. However, in England it is regarded as one of the most important diseases with which the fruit grower has to contend, while in South Australia, Adam (1) reports that it has become more prevalent in recent years. Although our Australian climate may exercise some natural check on the spread of the disease, the position should be closely watched so that on its appearance in an orchard the appropriate measures can be taken to prevent its establishment with the subsequent loss of trees.

Showing dead limb of an apricot tree. Death was due to attack by the silver leaf fungus.

The silver leaf fungus (*Stereum purpureum*) attacks many fruit trees such as apples, plums, apricots, peaches, nectarines, &c., although in Victoria it has been reported only on apples, plums, and apricots. In Britain, plums and apples seem to be the most susceptible but, strangely enough, cases have been noted in Victoria where apricots have been severely attacked and killed, while apples alongside in the same orchard have shown no signs of the trouble.

Symptoms.

Silvering of the foliage.—The first indication of the disease in an orchard usually appears as a silvering of the foliage of one or two branches of a tree. Later in the season these silvered leaves may split and become very ragged.

Death of branches.—If the silvering of the leaves is followed by the dying back of the limbs which bear them, one can be reasonably sure that the trouble is true silver leaf. The trouble may progress from limb to limb until ultimately the tree is killed, but in some cases the tree naturally recovers; this seems particularly so with vigorous trees and during dry seasons.

Discolouration of the wood.—If an infected branch be sawn off at the base, a dark brown discolouration will nearly always be evident in the wood, and it is in this part of the tree that the parasitic fungus grows and produces what is thought to be a toxic substance which causes the leaves to become silvered.

The fungus itself.—Following upon the death of a limb the reproductive or fruiting bodies of the fungus may develop on the dead wood (Fig. 2). These fruiting bodies may appear as bracket-like projections or as small discs with incurved edges. When newly formed they are of a characteristic purple-mauve colour, but as they age they become brownish. They frequently are found on dead branches on the pruning heap, or on stumps during the autumn, and especially after heavy rain. The most important point to

remember about these fruiting bodies is that they produce vast numbers of spores which are subsequently distributed throughout the orchard by the wind, in a manner similar to that by which the spores of the more common *Polystictus* fungus are disseminated.

The spore bearing silver leaf fungus on the limb of an apricot tree.

Control Measures.

Before setting out the measures to be adopted for the control of silver leaf it is necessary to consider the method by which the fungus gains entrance to a healthy tree. It has already been pointed out that the fungus spreads by means of spores produced from the fruiting body of the fungus on the dead wood. Oversea workers have proved that these spores cannot cause infection through sound uninjured bark. They have shown that the fungus belongs to the group known as wound parasites, so that it is only through injuries such as pruning wounds, damaged trunks, &c., that the fungus can gain entrance to the tree. Penetration is more readily effected through fresh wounds than through those that have been formed for some time.

Knowing the way in which the fungus spreads it follows that control measures should be directed at (1) the removal of the sources of infection, and (2) the protection of wounds.

Removal and Destruction of Affected Branches and Trees.

A branch that is silvered only lightly may be left for a short time if previous experience leads one to believe that it will recover. If, however, the affected limb shows signs of dying it should be removed at once and burned. In removing such branches care should be taken to cut below the discoloured wood; if this is not done the trouble will most likely extend to other parts of the tree. It is of course necessary to dress the wound as described below.

If the tree is badly silvered, recovery is not likely. It should be grubbed out as soon as possible. Any gaps may safely be replanted with healthy trees. It is important to burn dead trees, branches, &c., before the fungus has an opportunity of forming its fruiting stage on them.

The Protection of Wounds.

Where it is necessary to remove a broken or diseased branch the cut should be made close to the main branch so that the wound may quickly callus over. Injuries caused during cultural operations should be pared smooth with a knife.

It is most important that all wounds and injuries should be painted as soon as possible. In this regard the following preparation has been recommended by Brooks and other investigators:—To 2 lb. of white lead paste (as bought), add two teaspoonfuls of paste driers and two tablespoonfuls of linseed oil. Mix, then add two tablespoonfuls of turpentine, and mix well.

Reference.

(1) D. B. Adam.—Silver Leaf Diseases in Orchard Trees.—Dept. of Agriculture, South Australia. 40, page 693.

Horse Breeding

By R. N. Wardle, B.V.Sc., Veterinary Officer

Delivery Horses.

A light delivery horse of good quality.

AT the present time the demand for delivery horses is good. The right type is very hard to find and quick sales are being made in the city at prices from £15 to £25 a head. Purchasers are mainly bakers, milk retailers and oversea shippers. In addition there are numerous one cart tradesmen who run good looking turn-outs and are always out to make a purchase of something they fancy.

The type of horse sought for is one four to six years of age, of good conformation and with what to my mind is absolutely essential, the characteristic expressed by the one word—"quality".

No matter if it be a heavy delivery horse which often is a light or medium Clydesdale, a medium delivery which may be a first cross of a heavy and a light breed, or a light delivery which generally shows some evidence of draught blood, this factor of quality makes all the difference in the price, and it is the extra money obtained for the quality animal that makes the profit of the transaction.

It should be realized that quality can be obtained only by breeding from parents that show quality. In order to be able to recognize this attribute, it is necessary for one to "know" horses and such knowledge is not gained in a day: many persons in fact, even after years of experience, lack the instinct for the recognition of the finer points.

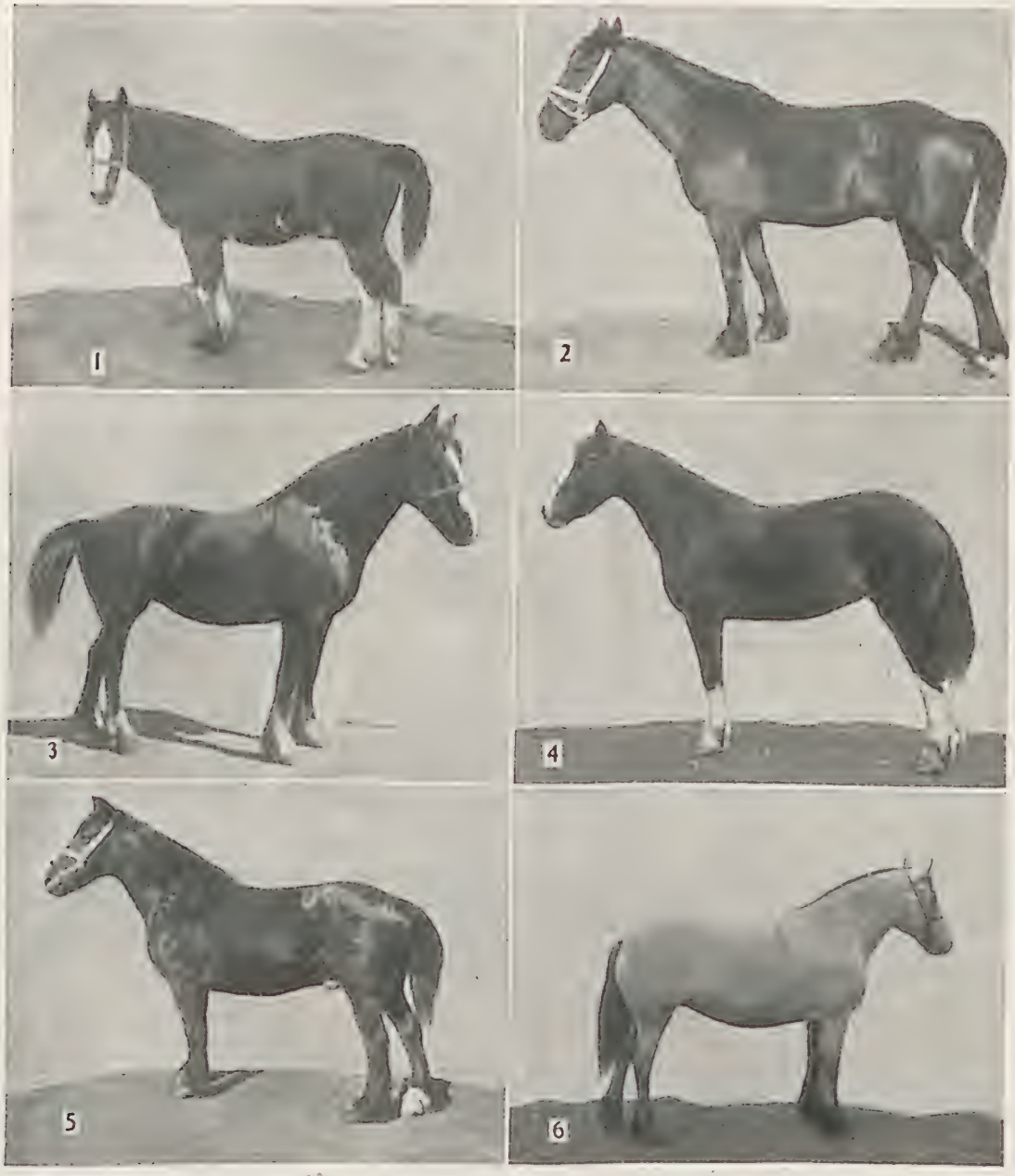
All the indications of quality are very difficult to list but the main ones concern the head, the skin, the hair, and the bones. The head should be finely cut and intelligent looking, with width between the eyes, which should have good expression; the skin should be of good texture with soft fine hair; the bones as indicated by the cannon bones should be reasonably fine, flat and hard, and where such is the case, it will be found that the tendons behind the cannons will be well defined through the skin which should carry straight silky hair.

It goes without saying that good conformation is essential, and smart carriage with a prompt and true action in both walking and trotting paces must be aimed at. No one can expect top price for a delivery horse that is goose rumped or roach backed or for one that is clumsy in its movements.

Now the question arises, how can horses approaching the ideal be bred?

Let us consider it in this way: there are three breeds of horses which, when mated with other pure breeds or with cross breds, maintain in the first case and improve in the second that inestimable character known as quality. Of these three breeds, one is a heavy breed—the Clydesdale, and the other two are light breeds—the Thoroughbred and the Arab. There are plenty of Clydesdales and Thoroughbreds in this country, so that it will be seen that we have both the light breed and the heavy breed to use as ires for breeding delivery horses.

In a brief article such as this, it will be sufficient to say that a quality Clydesdale stallion showing good action, of medium height and not too heavy should be used on any of various types of light roomy mares such as stout galloways, cobs, hacks and harness mares, always providing, as mentioned before, that these mares are of good conformation. The greater the quality of the mare the better will be the progeny, and it is found for this reason that thoroughbred blood in a mare is an asset.



Types of delivery horses at work in the city.

1. Heavy clean-legged type, height 16·2 hands. 2. Medium type, height 15·3 hands. 3. Light type, 15 hands. 4. Light, 15·1 hands. 5. Low set heavy type, height 15 hands. 6. Low set light type, 14·2 hands. Nos. 5 and 6 are suitable for pack animals.

All these types show evidence of draught horse blood and various degrees of quality.

Many of the best army gunners are bred by mating thoroughbred mares or near thoroughbreds with a Clydesdale stallion. The opposite kind of mating gives somewhat similar results: a thoroughbred stallion of about 15·2 hands would be used with delivery mares and with light and medium draughts. It has been found that, in this form of mating, it is most essentia

for the draught mare to have a small neat head, as big coarse-headed mares will pass on the fault and on the smaller and lighter progeny, this is accentuated.

In both these forms of cross breeding it will be found that there will be considerable diversity of types: there will even be differences in full relationship, but providing conformation and quality are there, the progeny should find their place in the demand for one or other of the classes mentioned.

Clydesdale Breeding.

Those interested in draught horses are aware of the fact that for certain well known reasons horses are cheaper than they have been for some years. The fact not being kept in mind by every one, however, is that just as certain as night follows day, they will recover in demand and bring better prices.

It takes five or six years to breed and rear horses to the age at which most people desire to purchase them, that is as four- and five-year-olds, and, if so many farmers cease breeding operations altogether, the time will come in the not far distant future when the demand will be greater than the supply. The present time is one for farmers to give some thought to their horse breeding activities and to examine their teams with an idea of making replacements. Very old geldings and mares and others that may lack quality should be culled when opportunity offers and young quality fillies should be purchased. If registered fillies be obtained there is no reason why the nucleus of a small stud could not be instituted.

If he is desirous of reducing the number of horses held, the farmer might with advantage purchase a young filly for every two animals culled; then the best of the mares on the property should be selected for mating with a quality Clydesdale sire so that, in the future when the price of draught horses rises, the natural wastage can be met without resorting to purchase.

The Clydesdale is undoubtedly a wonderful breed; by judicious mating the heaviest of geldings may be bred (and it should be remembered there is always a demand at relatively good prices for this class), and for Australian farm conditions the breed stands supreme for the production of active, fast walking team horses.

To the visitor, a striking feature of our country districts is the number of groups of quality Clydesdales seen in the paddocks, or in the teams as one passes. Again one who observes the working horses in our large cities, cannot help but be impressed by the evenness of type and the Clydesdale quality of the lorry teams as they move their loads smartly along the streets.

No one is desirous of advising farmers to increase horse production in general numbers, but I venture to say that there is still plenty of scope for a more judicious policy in horse breeding to advance further the quality and type in the draught horses of the State. Never in the history of horse breeding in Victoria has the time been so opportune for breeders to take steps to this end. Simply because horses are cheap, breeding operations should not be stopped entirely, but each farmer in a small way should carry on and breed from selected animals. It is felt that those that do their part will be amply rewarded.

"Victoria" Red Poll Cattle

(continued from page 217)

The success of the "Victoria" stud and its influence on Victorian cattle are shown by the fact that 574 bulls and 421 females have been sold as stud animals. Sales have been effected to all Australian states and New Zealand.

At the present time there are 123 females and 17 males in the "Victoria" stud, and of these 52 females and 13 males are descendants of Woodburn Peter Pan. Four of the males, Woodburn Peter Pan, Burnwood Masterpiece, Chandpara Valentine, and Victoria Petrology are the stud sires, but the remainder are available for purchase at prices based on the average butter-fat production of the dam in 273 days and on the age of the bull or bull calf.

The young sire, Victoria Petrology, is a very attractive animal by Woodburn Peter Pan and from Victoria Lady Velvet which produced 9,654 lb. milk, 4·31 per cent. test, and 416 lb. butter-fat. Victoria Lady Velvet is a half-sister to Chandpara Valentine, being by the same sire.

London Markets

Weekly Prices

The following information as to prices offering in London for the principal Victorian primary products has been taken from cablegrams received each week by the Department of Agriculture from the Victorian Agent-General in London.

Product.	Price for Week Ending—			
	7th April	14th April	21st April	28th April
		d.	*d.*	*d.*
Lamb, 1st quality, Victorian .. .. 29–36 lb. ..	No Cable Easter Holidays.	6	6	6
Lamb, 1st quality, Victorian .. .. 37–42 lb. ..		5¾	5⅝	5⅝
Lamb, 1st quality, other States .. .. 29–36 lb. ..		6	6	6
Lamb, 1st quality, other States .. .. 37–42 lb. ..		5¾	5¾	5¾
Lamb, 2nd quality, Victorian .. .. 28 lb. and under		6¼	6⅛	6⅛
Lamb, 2nd quality, Victorian .. .. 29–36 lb. ..		6	6	5⅞
Lamb, 2nd quality, other States .. .. 28 lb. and under		6½	6½	6½
Lamb, 2nd quality, other States .. .. 29–36 lb. ..		5¾	5¾	5¾
Lamb, 3rd quality, all States .. .. 28 lb. and under		6⅜	6⅜	6¼
Lamb, 3rd quality, all States .. .. 29 lb. and over		5¼	5⅛	5
Mutton wethers and/or maiden ewes .. Under 40 lb. ..		3⅝	3½	3½
Mutton wethers and/or maiden ewes .. 41–48 lb. ..		3¼	3¼	3¼
Mutton wethers and/or maiden ewes .. 49–56 lb. ..		3	3	3
Mutton ewes .. .. Under 40 lb. ..		3⅜	3⅜	3⅜
Mutton ewes .. .. 41–48 lb. ..		3⅛	3⅛	3⅛
Beef, frozen ox hinds .. .. .. 145–210 lb. ..		3⅞	3⅞	3⅞
Beef, frozen ox crops, weights corresponding		3	3	3
Beef, chilled ox hinds .. .. .. 145–210 lb. ..		4	3⅞	4
Beef, chilled ox crops, weights corresponding		2¾	2⅝	2¾
Pork, Australian 1st quality .. .. 60–80 lb. ..		6¾	6¾	6⅝
Pork, Australian 1st quality .. .. 81–100 lb. ..		6⅝	6½	6⅜
Pork, New Zealand, 1st quality .. .. 60–80 lb. ..		6¾	6¾	6⅝
Pork, New Zealand, 1st quality .. .. 81–100 lb. ..		6⅜	6½	6⅜
		s.	*s.*	*s.*
Bacon, Canadian .. .. .. per cwt. ..		85	83	80
Bacon, Empire (cured in England).. .. per cwt. ..		80	80	79
Bacon, Danish .. .. per cwt. ..		96	94	90
Butter, unsalted, choicest grade .. .. per cwt. ..		114–115	114–115	114–115
Butter, unsalted, 1st grade .. .. per cwt. ..		113	113	113
Butter, unsalted, 2nd grade .. .. per cwt. ..		..	..	..
Butter, unsalted, pastry grade .. .. per cwt. ..		..	..	..
Butter, salted, choicest grade .. .. per cwt. ..		112–114	112–113	112–113
Butter, salted, 1st grade .. .. .. per cwt. ..		111–112	111–112	110–112
Butter, salted, 2nd grade .. .. .. per cwt. ..		107–109	108–109	107–109
Butter, salted, pastry grade .. .. per cwt. ..		105–106	105–106	102–105
Butter, Danish .. .. per cwt. ..		124	124	124
Market (butter)		Improved demand at the end of the week.	Quiet.	Slow.

Registration of Stallions

Nineteenth Annual Report

By

R. J. deC. Talbot, B.V.Sc.,
Chief Veterinary Inspector.

IN reviewing the operations of the Horse Breeding Act for the season 1938–39, one's attention is immediately directed towards the decrease in the number of registrations, which is 229 less than that effected for the year 1937–38. What perhaps is even more significant is the drop in the number of draught stallions presented for examination—416 this year as against 730 for the season 1937–38, representing a decrease of 314.

As was mentioned in last year's report, something in the nature of a boom in horse breeding occurred during the period 1931 to 1935, and it was anticipated that a gradual swing back to normal would occur. Due, however, to the extremely bad seasons in the north and north, western portions of the State, many farmers owing to shortage of feed had to very materially reduce the number of their horses. This, combined with an increase in the number of tractor units introduced into the wheat belt during the past few years, has led to a slump in the industry. This is to be regretted because the horse is still the most economical power unit on the farm, and from a national point of view it is essential that Australia produces an adequate supply of horses of all types, because they undoubtedly must continue to play a large part in any question of defence.

During the season under review, the total number of registrations was 1,032 draughts, 253 light horses, and 191 ponies, a total of 1,476 compared with 1,705 for the season 1937–38. During the year the veterinary staff attended 339 centres at which parades had been advertised, and 85 special examinations were held at the expense of the owners.

By reason of the fact that, in most cases, veterinary officers travelled by motor car it was possible to increase the number of centres at which parades were held, and to complete all examinations by the 8th of August, which was about a month earlier than in previous years. As was anticipated, this innovation was popular with stallion owners who, in the past, had complained that some of the parades were held so late as to interfere with the breeding season. During the forthcoming year, the same system of examinations will be carried out, and owners are urged to present their stallions at scheduled parades as it will not be possible to arrange for special examinations until all scheduled parades have been completed.

The number of stallions of all classes examined for the past two seasons is as follows:—

Year.	Draught.	Light.	Pony.	Total.
1938–1939 ..	416 (Decrease 314)	88 (Decrease 61)	67 (Decrease 23)	571 (Decrease 398)
1937–1938 ..	730	149	90	969

As already mentioned, this year's figure represents a decrease of 314 draughts and a decrease in the total of 398 horses examined.

Of the number examined this year, 446 were registered and 125 were refused registration.

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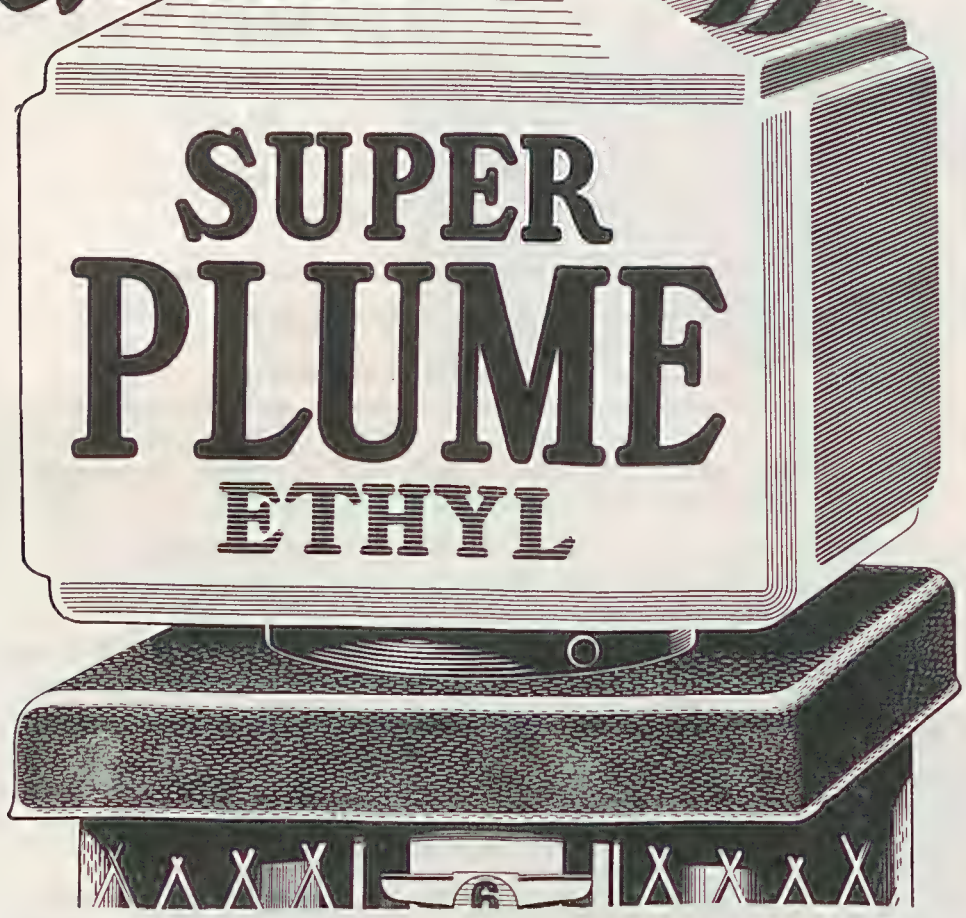


AUSTRALIA'S

Best PETROL

Of the latter 62 or 10.8 per cent were rejected on account of unsoundness, and 63 or 11 per cent. because they were considered to be below a reasonable standard in respect of type, conformation and/or breeding. The total percentage of rejections was 21.8 per cent., the lowest figure for ten years. The percentage of rejections for type and conformation (11 per cent.) is a great improvement on the figures for previous years.

In the draught class the percentage of rejections for type and conformation was below 10 per cent., which is extremely satisfactory, and is due in some measure to the fact that with the passing of the boom period, horse owners are not so inclined to retain inferior or border-line colts and present them for examination in the hope that they will pass.

At the present time the horse breeding industry is experiencing a period of depression. This will pass, and farmers would be well advised to make every endeavour to better the quality of their stock, even if there is at present little incentive to increase the numbers bred.

SUMMARY OF EXAMINATIONS, 1938-39.

	Draught.		Light.		Pony		Total.	
	Examined. 416	Certificated. 318	Examined. 88	Certificated. 70	Examined. 67	Certificated. 58	Examined. 571	Certificated. 446
	Rejected.	Per cent. Rejected.	Rejected.	Per cent. Rejected.	Rejected.	Per cent. Rejected.	Rejected.	Per cent. Rejected.
Bog Spavin	3	·721	..	..	..	..	3	·525
Bone Spavin	..	..	1	1·136	1	1·492	2	·350
Chorea (Nervy)	2	·481	..	..	..	..	2	·350
Curb	..	..	2	2·272	..	..	2	·350
Ringbone	5	1·201	1	1·136	..	..	6	1·050
Sidebone	41	9.855	..	..	..	..	41	7·180
Stringhalt	4	·962	..	..	..	..	4	·700
Thoroughpin	2	·481	..	..	..	..	2	·350
Through unsoundness	57	13·701	4	4·544	1	1·492	62	10·855
Through disapproval	41	9·855	14	15·909	8	11·940	63	11·033
Total	98	23·556	18	20·453	9	13·432	125	21·888

SUMMARY OF EXAMINATIONS, 1937-38.

	Draught.		Light.		Pony.		Total.	
	Examined. 730	Certificated. 508	Examined. 149	Certificated. 126	Examined. 90	Certificated. 78	Examined. 969	Certificated. 712
	Rejected.	Per cent. Rejected.	Rejected.	Per cent. Rejected.	Rejected.	Per cent. Rejected.	Rejected.	Per cent. Rejected.
Bog Spavin	8	1·096	..	..	..	..	8	·826
Bone Spavin	..	..	..	..	..	..	..	..
Chorea (Nervy)	5	·685	..	..	..	..	5	·516
Curb	..	..	..	..	..	..	..	..
Ringbone	5	·685	1	·671	..	..	6	·619
Sidebone	95	13·014	3	2·013	..	..	98	10·113
Stringhalt	4	·548	..	..	..	..	4	413
Through unsoundness	117	16·028	4	2·684	..	..	121	12·487
Through disapproval	105	14·383	19	12·752	12	13·333	136	14·035
Total	222	30·411	23	15·436	12	13·333	257	26·522

[*Continued on page 230.*

Potato Manuring

The Effect of Ammonium Sulphate

By J. T. Ramsay, Potato Expert.

Potato manurial trails at Neerim, Gippsland.

SINCE the most suitable dressings of superphosphate for the various leading potato districts have been determined after exhaustive trials extending over a long period of years, an effort has been made, commencing in the season 1932–33, to test the most effective rate of applying ammonium sulphate. This nitrogenous manure, in conjunction with super., has proved to be a most beneficial and profitable manurial treatment for potato crops grown under Victorian conditions. While there is a big difference in the rates of application per acre of superphosphate giving maximum yields, there appears to be only a slight range of variation of the rate at which ammonium sulphate can be profitably applied. In the case of superphosphate, the quantities per acre giving maximum increases in weight of crop vary from 3 cwt. to 9 cwt.

For the volcanic soils in the western and central highland districts, the maximum profitable rating of super. is 3 cwt. per acre. For all other districts, with the exception of the Otway Forest, 6 cwt. of super. should be applied. Results obtained over a period of seven years in the Otway district show that up to 9 cwt. of super. gives a profitable return. The explanation of this is probably to be found in the heavy rainfall in the last mentioned area, where the average is about 60 inches per annum. In the case of ammonium sulphate 1 cwt. per acre seems to be the limit from which maximum benefit can be obtained in the majority of soils.

An analysis of the figures given for the various centres where two rates of application of ammonium sulphate have been tested will prove informative. Omitting the Otway, which must be dealt with separately on account of its abnormal climatic environment, four centres out of eight show a definite decrease where 2 cwt. per acre of ammonium sulphate has been applied, compared with the yield from the 1 cwt. dressing; two others show no profitable increase, while at two centres only has the 2 cwt. application

proved definitely beneficial. Since the period of these trials ranges from four to seven years, the results can be regarded as significant. At Illowa (red to black volcanic) and Wheatsheaf (red volcanic), the additional hundredweight of ammonium sulphate was of no benefit inasmuch as the monetary return merely offset the cost of the additional manure. At Trentham (red volcanic) and Musk (dark volcanic), the application of the extra quantity of nitrogenous fertilizer appears to be justified judging from the figures over a six-year period.

The accompanying tables giving details of the average returns from various centres for the period over which the tests have been made should prove of interest.

While the reductions in yield where the heavier applications of ammonium sulphate were made may not appear to be significant, it must be pointed out that no benefit was derived from the additional expenditure.

Values for comparison of results, expressed in terms of £ *s.* *d.*, have been taken at £5 per ton which, if anything, is probably a low average over the period of the tests.

The analyses of the soils are given, and from these it will be seen that they do not give any

DISTRICTS IN WHICH THE HEAVIER APPLICATION OF AMMONIUM SULPHATE SHOWS A DEPRESSION IN YIELD.

Manurial Treatment.	Average Tonnage.	Value at £5 per ton.	Cost per acre of manures.	Value of produce after deducting cost of manures.	Soil Analysis. (Parts per 100,000.)		
					Nitrogen.	Phosphoric acid.	Potash.
	Tons cwt.	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*			
Illowa (6 years' average)—Rainfall 28 inches.							
No manure	4 15	23 15 0	..	23 15 0			
Super. 3 cwt. + Ammon. Sulphate 1 cwt.	5 17	29 5 0	1 6 0	27 19 0	392	275	362
Super. 3 cwt. + Ammon. Sulphate 2 cwt.	5 16	29 0 0	1 18 0	27 2 0			
Millbrook (5 years' average)—Rainfall 35 inches.							
No manure	3 14	18 10 0	..	18 10 0			
Super. 3 cwt. + Ammon. Sulphate 1 cwt.	7 7	36 15 0	1 6 0	35 9 0	143	180	249
Super. 3 cwt. + Ammon. Sulphate 2 cwt.	7 0	35 0 0	1 18 0	33 2 0			
Fish Creek (5 years' average)—Rainfall 50 inches.							
No manure	4 16	24 0 0	..	24 0 0			
Super. 6 cwt. + Ammon. Sulphate 1 cwt.	8 12	43 0 0	2 0 0	41 0 0	90	38	151
Super. 6 cwt. + Ammon. Sulphate 2 cwt.	8 7	41 15 0	2 12 0	39 3 0			
Wheatsheaf (6 years' average)—Rainfall 45 inches.							
No manure	3 18	19 10 0	..	19 10 0			
Super. 3 cwt. + Ammon. Sulphate 1 cwt.	6 4	31 0 0	1 6 0	29 14 0	140	79	177
Super. 3 cwt. + Ammon. Sulphate 2 cwt.	6 3	30 15 0	1 18 0	28 17 0			

DISTRICTS IN WHICH THE HEAVIER DRESSING OF AMMONIUM SULPHATE SHOWS PROFITABLE INCREASE.

Manurial Treatment.	Average Tonnage.	Value at £5 per ton.	Cost per acre of manures.	Value of produce after deducting cost of manures.	Soil Analysis. (Parts per 100,000.)		
					Nitrogen.	Phosphoric acid.	Potash.
	Tons cwt.	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*			
Musk (6 years' average)—Rainfall 45 inches.							
No manure	3 11	17 15 0	..	17 15 0			
Super. 3 cwt. + Ammon. Sulphate 1 cwt.	5 12	28 0 0	1 6 0	26 14 0	291	361	233
Super. 3 cwt. + Ammon. Sulphate 2 cwt.	6 8	32 0 0	1 18 0	30 2 0			
Trentham (6 years' average)—Rainfall 45 inches.							
No manure	3 0	15 0 0	..	15 0 0			
Super. 3 cwt. + Ammon. Sulphate 1 cwt.	5 15	28 15 0	1 6 0	27 9 0	308	207	211
Super. 3 cwt. + Ammon. Sulphate 2 cwt.	6 11	32 15 0	1 18 0	30 17 0			

DISTRICTS IN WHICH THE HEAVIER DRESSING OF AMMONIUM SULPHATE SHOWS SLIGHT BUT NOT PROFITABLE IMPROVEMENT.

Manurial Treatment.	Average Tonnage.	Value at £5 per ton.	Cost per acre of manures.	Value of produce after deducting cost of manures.	Soil Analysis. (Parts per 100,000.)		
					Nitrogen.	Phosphoric acid.	Potash.
	Tons cwt.	£ s. d.	£ s. d.	£ s. d.			
Koroit (4 years' average)—Rainfall 28 inches.							
No manure	6 17	34 5 0	..	34 5 0			
Super. 3 cwt. + Ammon. Sulphate 1 cwt.	8 5	41 5 0	1 6 0	39 19 0	280	332	431
Super. 3 cwt. + Ammon. Sulphate 2 cwt.	8 10	42 10 0	1 18 0	40 12 0			
Romsey (6 years' average)—Rainfall 28 inches.							
No manure	4 16	24 0 0	..	24 0 0			
Super. 3 cwt. + Ammon. Sulphate 1 cwt.	6 0	30 0 0	1 6 0	28 14 0	131	76	175
Super. 3 cwt. + Ammon. Sulphate 2 cwt.	6 5	31 5 0	1 18 0	29 7 0			

accurate guide as to the need for nitrogenous manurial applications. The only reliable method of determining this is by practical test over a series of years. Variations in rainfall and temperature from year to year have a definite influence, but as these cannot be controlled the averaging of results over as long a period as possible is the one reliable test.

Beech Forest with its heavy rainfall shows the greatest variation in tonnage between manured and unmanured areas. The yields obtained are set out in the following table:—

BEECH FOREST (7 YEARS' AVERAGE)—RAINFALL 60 INCHES.

Manurial Treatment.	Average Tonnage.	Value at £5 per ton.	Cost per acre of manures.	Value of produce after deducting cost of manures.	Soil Analysis. (Parts per 100,000.)		
					Nitrogen.	Phosphoric acid.	Potash.
	Tons cwt.	£ s. d.	£ s. d.	£ s. d.			
No manure	3 4	16 0 0	..	16 0 0			
Super. 6 cwt. + Ammon. Sulphate 1 cwt.	7 3	35 15 0	2 0 0	33 15 0			
Super. 6 cwt. + Ammon. Sulphate 2 cwt.	7 12	38 0 0	2 12 0	35 8 0	314	70	229
Super. 9 cwt. + Ammon. Sulphate 1 cwt.	7 12	38 0 0	2 14 0	35 6 0			
Super. 9 cwt. + Ammon. Sulphate 2 cwt.	8 9	42 5 0	3 6 0	38 19 0			

Registration of Stallions

(continued from page 227)

Appeals.

Four appeals were lodged against the decision of the Veterinary Officer; three were upheld and one was dismissed.

Parades for Coming Season.

The schedule of parades appears in the supplement to this issue of the *Journal*, and owners are advised to select the centre that will be most convenient to them.

Application for registration should be made on the prescribed form before 1st July. Applications must be accompanied by a fee of £1 and compensation fee £2. The necessary forms may be obtained from secretaries of agricultural societies and from officers in charge of police stations.

Change of ownership must be notified without delay in order that certificates of registration may be endorsed accordingly. Registration expires within 30 days of change of ownership unless the required notice is given.

Spaying of Animals

By W. D. Shew, G.M.V.C., B.V.Sc., Senior Veterinary Officer

THE operation, commonly spoken of as spaying, consists of the extirpation or removal by surgical measures of the ovaries of female animals. This unsexing, when the ovaries are healthy, is described technically as "oophorectomy"; when the operation is performed because of disease in the organs it is spoken of as "ovariotomy".

Spaying is practised on all domestic animals. Mares are spayed generally to overcome faulty or vicious habits, such as kicking or biting, or because of uncertainty of temperament. Cows and heifers are so treated when it is desired to lengthen the lactation period and to hasten fattening and improve the quality of the beef; the meat from a spayed heifer is supposed to be as good as that of a steer. Sows too, are sometimes spayed so that they may be fattened quickly, and bitches and cats are operated on to prevent them from becoming a nuisance. The domestic fowl may be spayed in order to enhance her value for the table, and for obvious reasons the spaying of the female ostrich is sometimes practised.

Spaying of Cattle.

Heifers may be spayed to limit numbers of a herd without culling; such animals fatten more quickly and grow faster than those not operated on. They are also quieter and cause less disturbance in the herd.

Cattle may be spayed from the age of six weeks, at almost any time of the year and whether they are are fat or poor. It is advisable, however, to wait for suitable weather conditions, and if exterior methods (flank or ventral) are adopted, the operation should be performed when the weather is cool and when the pastures are green and flies are not troublesome.

Methods.

There are three methods of spaying:—(1) the flank method; (2) through the vagina; and (3) through the under surface of the abdomen or belly in front of the udder. (The latter method is adopted only for calves or other small animals.)

Equipment Required.

(1) Spaying emasculator.
(2) Sharp knife.
(3) Clippers or curved scissors to remove hair.
(4) Some strong half curved needles.
(5) Pair of needle-holders.
(6) Strong suture silk or strong gut in reel.
(7) Pair of artery forceps.
(8) Roll of absorbent cotton wool.
(9) Bottle of antiseptic (Dettol, Lysol, Monsol, Sterelin or similar preparation).
(10) Bottle of methylated spirits or tincture of iodine (to paint skin prior to incision).
(11) Cake of good soap and towel.
(12) Clean buckets with supplies of warm water for cleansing hands, &c.

The Flank Operation.

All instruments should be sterilized in boiling water for ten minutes prior to use. When not in use they should be kept in a solution containing 5 per cent. Lysol, Monsol, Dettol, Sterelin, or some similar antiseptic.

The operator's hands must be thoroughly cleansed by scrubbing with soap in an antiseptic solution containing any of the preparations

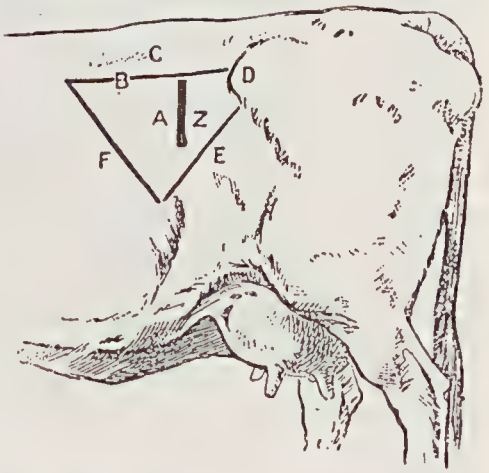
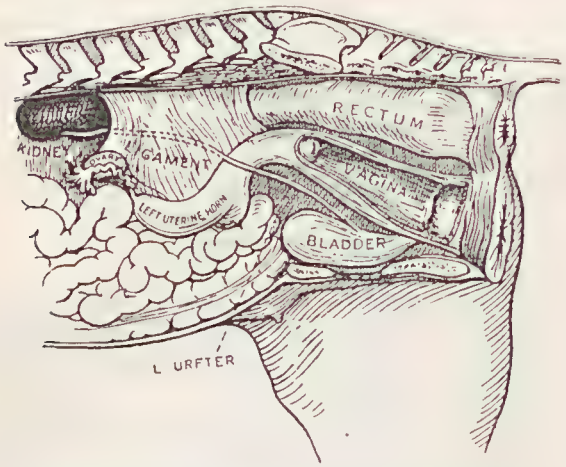


Diagram showing the site for the spaying operation.

F is last rib; D, hip bone; Z, line of incision; B, C, and E, muscle fibres; the area A consists of abdominal muscles.



Showing the position of the genital organs.
[After Wooldridge.

just mentioned at a strength of 1 per cent. Betweeen operations also the hands should be cleansed in the solution.

The flank method is probably the easiest and the one most commonly followed by laymen. The animal should be placed in a crush. On some properties crushes have been specially built for spaying. The main objective is to keep the animal as still as possible while leaving the place of operation easily accessible, and as it is essential that she should be in a standing position, rails should be placed under her to prevent her lying down. On the gate side (if only one gate is used) there should be a small trap-door through which the operator may work. The operation can be performed on either the left or right side, but for several anatomical reasons it is preferable that it be done on the left side.

The site for the operation is in the abdominal wall between the last rib and the point of the hip (see diagram). It is preferable to clip the hair and the area should be thoroughly washed with antiseptic solution, dried with clean cotton wool and painted with either methylated spirits or with tincture of iodine.

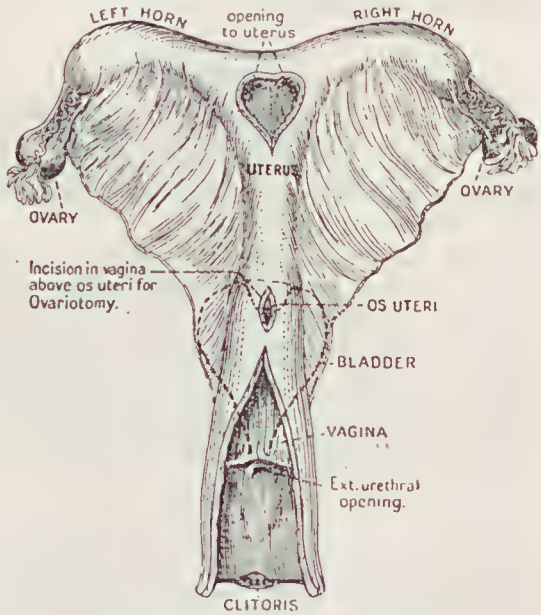
An incision is then made, usually 3½ to 4 inches long, in a downward direction. The skin having been cut through, the fibres of the outer muscle are exposed; these can then be divided with the knife or the fingers. When the muscle has been divided, the fibres of the next muscle running in an opposite direction are likewise divided.

The peritoneum or lining of the abdomen or bowel cavity is now revealed and when divided shows in the opening the rumen or first stomach wall. The peritoneum can be recognized by its shining appearance. The hand is then inserted and the right ovary (if operation is on the left side) is sought. The ovaries are usually oval shaped and vary in size with the age of the animal. In calves they are about the size of a pea; in two-year-old heifers about the size of a broad bean, while in old cows they may be as large as a bantam's egg. Should an ovary be cystic it will be larger than normal, and may be very much enlarged if diseased. From the illustration it will be seen that one ovary is attached to the right horn of the uterus and the other to the left horn.

When with one hand the operator has grasped an ovary, the emasculator should be inserted with the other hand and each ovary carefully removed. The incision is then sutured or stitched with several strong stitches which should be interrupted, i.e., each stitch should be separate. Sometimes a continuous thread is used, as when bags are being sown; this should not be done. The stitches should be dressed with collodion, or if a cheap dressing is required, Stockholm tar may be used. No further treatment will then be required, except the removal of the stitches when the wound heals.

The Vaginal Operation.

This method has many advantages and is the one almost always adopted by a veterinarian when operating on adult cattle. If no crush



The vagina, uterus and ovaries.
[After Wooldridge.

[*Continued on page 260.*

Acidity of Victorian Butters

Results of 1938 Tests

R. N. Trembath, B.Agr.Sc., Dairy Technologist, and F. S. J. Newman, B.Agr.Sc., Assistant Research Officer, State Research Farm, Werribee

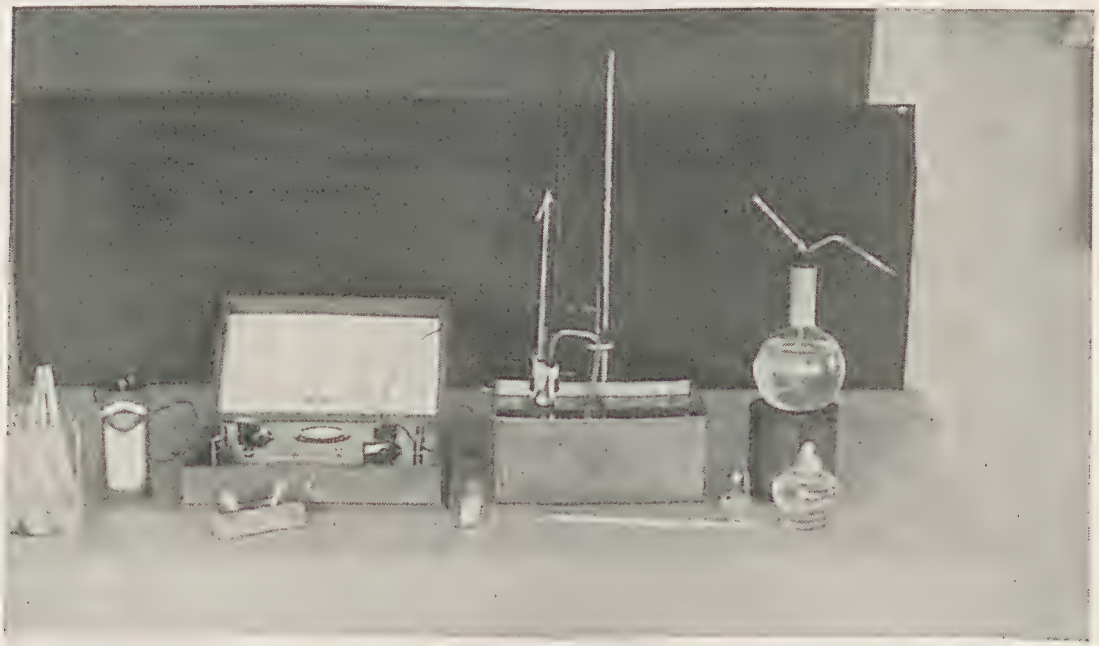
IT has been well established that high acidity of butter is one of the main factors responsible for poor keeping quality. Among the many workers who have demonstrated this fact are the Victorians, Loftus Hills, Scharp, and Bellair, who made a comprehensive survey of the factors influencing the keeping quality of Victorian butters in cold storage. A relevant extract reads:—"Of the factors measured, the degree of acidity (pH value) of the butter was the most important in controlling its keeping quality".

The results of this investigation were widely disseminated in Victoria, and, supported by eminent overseas workers, have been everywhere accepted.

It was with the object of ascertaining the need for some check on acidities that this laboratory commenced a series of examinations on butters sampled during the usual routine round of the grading floors. During the winter and early spring local butters were sampled, and, as the export trade increased, this was brought into the survey.

Samples of approximately three ounces were taken from each box examined. Where a biological examination was made on the butter, a sample was taken from another box of the same churning, to obviate an excess boring of the one box.

The butters were not selected strictly at random, since the normal routine was persevered with—that is, choice butters which had been degraded were sampled on the round, with an occasional choicest butter from a factory due for a "count". The discrepancy between the number of butters examined for degree of acidity, and those graded and counted is due to the practice of attending at the export floors early in the day, often missing the official grading. The majority of the butters



Potentiometer and quinhydrone electrode used in determining the pH value of butters.

counted and graded were thus from the local floor. It is considered that this does not affect the conclusions, as it is usually the practice to standardize to a higher acidity for the local market, thus giving a rather conservative tendency to the definite alkaline trend of the butters examined.

The titratable acidity of the butters was determined by the method of Nissen. The great majority of the titrations were performed by two workers, with two others assisting at intervals, which probably explains some of the discrepant results —as the end point of the titration, unless one is familiar with it, is quite difficult to discern, and a considerable excess of N/50 sodium hydroxide can be added without appreciable change in the colour. The end point can also vary slightly due to the different intensity of colour found in butterfat; but with care and experience the end point may be readily detected, as shown by the reasonably close correlation between pH and titratable acidity (demonstrated in Figs. 2 and 3).

To the alkaline butters 1 to 2 mls. of N/50 HCl was added, and the mixture back titrated with N/50 NaOH again using phenolphthalein as an indicator, the result being expressed in mls. of N/50 HCl.

The phenolphthalein for all titrations was corrected for acidity before use.

The pH determinations were made on the serum of the remainder of the butter after the 18 gramme sample for titratable acidity had been withdrawn. The sample was heated in a water bath to 70–80° C. and held at this temperature until completely melted and the serum separated, complete separation being ensured by gentle centrifuging—care being taken that no curd separated out. The serum was then withdrawn from under the fat and the pH determined by means of a direct reading potentiometer and the quinhydrone electrode. The instrument was checked against Sorensen's standard buffer solutions at various points in its range, and always checked with Potassium biphthalate

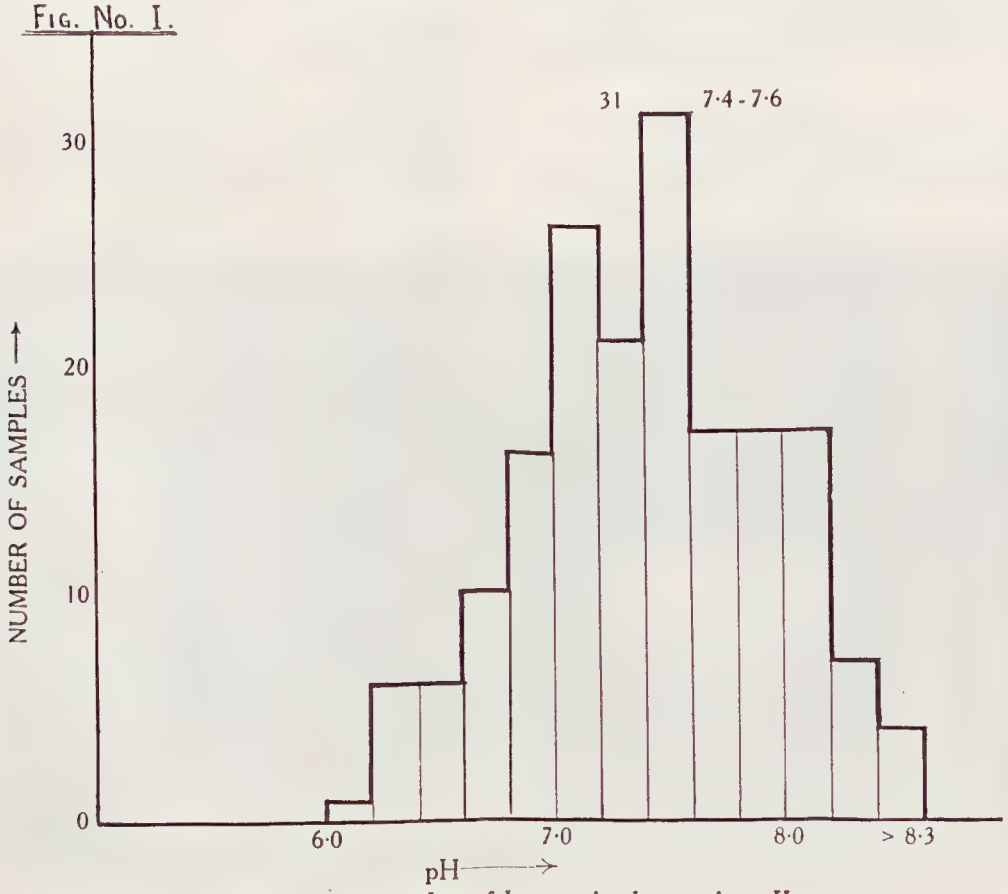


Fig. 1.—Showing the number of butters in the varying pH ranges.

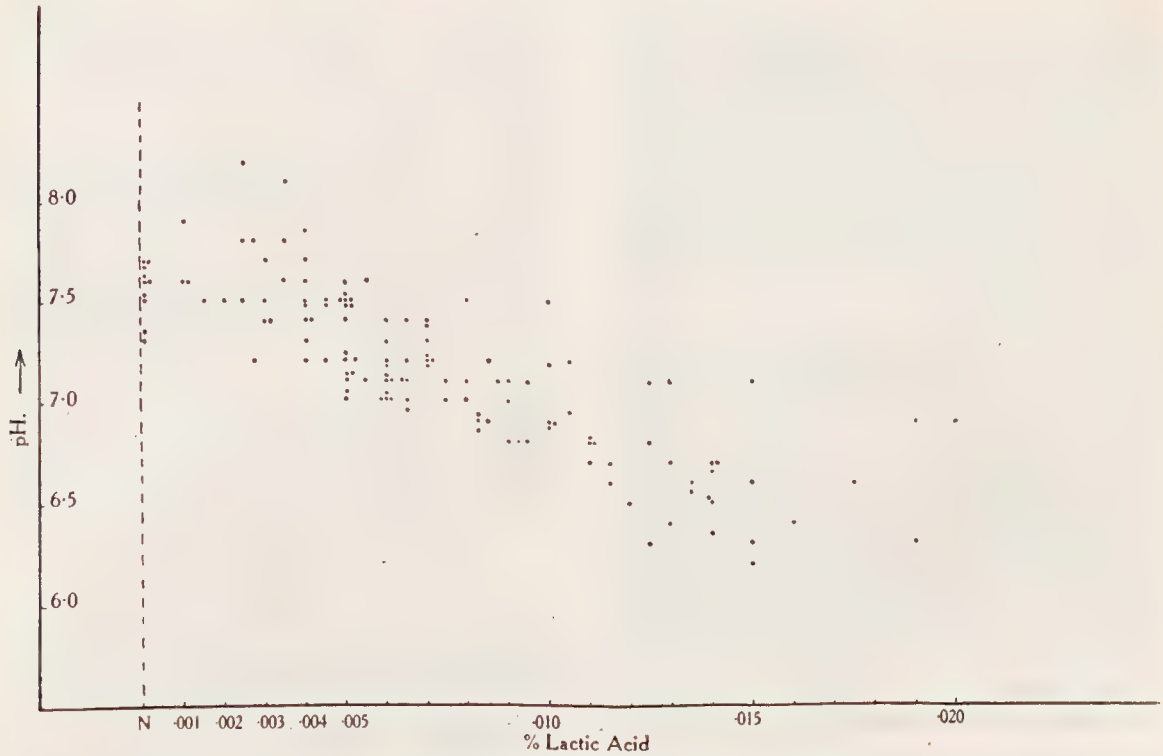


Fig. 2.—The correlation of pH and titratable acidity.

buffer before each set of six determinations. Readings were taken to the second decimal place, but it was considered sufficiently accurate to record the results to 0.1 pH since the samples were for the purpose of control, and "drifting" pH was frequently encountered.

As was expected by those regularly tasting butters over the last few years, a marked change in the pH has occurred. This is shown by a comparison of the results obtained in the work of Loftus Hills, Scharp, and Bellair in 1933, and that under review. Loftus Hills, Scharp, and Bellair grouped sixty-six results as shown in Table I.

TABLE I.

Mean pH	6.51
Maximum pH	7.68
Minimum pH	5.37

pH Range.	No.	Percentage.
5·0—5·5	1	53·0
5·5—6·0	8	53·0
6·0—6·5	26	53·0
6·5—7·0	14	21·2
7·0—7·5	15	22·7
7·5—8·0	2	3·1
	66	

These were taken one from each of 66 factories.

In 1938, 180 butters from 70 factories were examined as shown in Table II.

TABLE II.

Mean pH	7·38
Maximum pH	8·65*
Minimum pH	6·03

* The quinhydrone electrode is not reliable above a pH of 8·3. In future tables anything over pH 8·3 is so designated.

pH Range.	No.	Percentage.	
6·0—6·4	9	5·0	
6·5—6·9	30	16·7	
7·0—7·4	58	32·2	
7·5—7·9	55	30·5	46·1
8·0+	28	15·6	
	180		

It will be seen from this comparison that the percentage of butters in 1932–33 with a pH less than 6·5, viz., 53 per cent—has dropped to 5 per cent.; while at the other end of the range, the 3 per cent. of butters over 7·5 pH has increased to 46 per cent. Still more striking is the fact that 15·6 per cent. of the samples examined had a pH of 8·0 or over. This high pH is definitely overdoing the standardization of acidity, although, as will be shown later, it was not always

detected by the graders. The only satisfactory feature is the evident readiness of factory managers to adjust their processing details when authoritative facts are placed before them—in this case, the menace of high acid butter to keeping quality. The time has now come to sound a note of warning against the tendency to go to the other extreme, since as shown above, 28 out of the 180 butters examined were definitely over-neutralized, and a further 55 had a pH of 7.5 or over.

No definite limit has been set, above which the pH has a constant deleterious effect on the flavour or keeping quality, or both, but opinions expressed confirm the idea that a pH of 7·3—7.5 is the extreme desirable, with a possible optimum range of 6·7—7·2. McDowall (D.R.I. 1937) gives the best range as 6·7—7·0, with an upper limit of 7·2. Gilmour and Arup (Irish Free State) give a lower limit of 6·7. Kretchmar (W.A. 1938) follows these authorities with 6·7—6·9. Loftus Hills (D.M.R. 1938) suggests 6·8—7·8, showing a tendency to favour the alkaline range.

The influence of low acidity or alkalinity on the initial grade of the butter is not marked. Irregularity in processing will probably have as much effect as deliberate over-neutralization, or effects may be masked by other flavours—feed taints, salting, unclean creams, &c.

Of the butters sampled, 83 were examined by Commonwealth or State graders, and an attempt has been made to correlate initial grade with the pH.

TABLE III.—ALL BUTTERS.—GRADE : pH.

pH Range.	93.	Per cent.	93—.	Per cent.	Below Choicest.	Per cent.	Total
6·0—6·4	2	10	0	—	6	11·3	8
6·5—6·9	2	10	1	10	8	15·1	11
7·0—7·4	7	35	3	30	10	18·9	20
7·5—7·9	3	15	6	60	21	39·6	30
8·0+ ..	6	30	0	—	8	15·1	14
	20	..	10	..	53	..	83
	24·1 per cent.		12 per cent.		63·9 per cent.		

The apparent predominance of 93— (bare choicest) butters in the 7·5—7·9 range dwindles when the 8·0+ range is included.

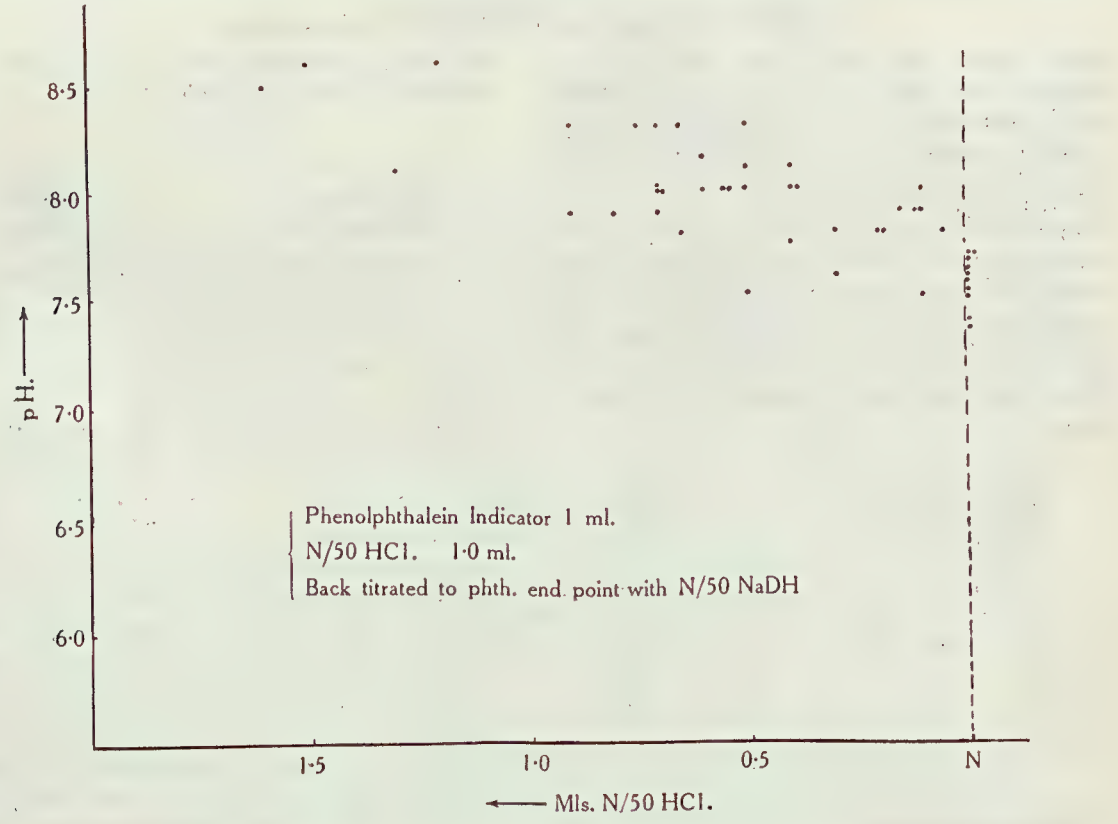


Fig. 3.—The correlation of pH and titratable alkalinity.

pH Range 7·5 to 8·0 +.

Grade.	93.	93—.	Below Choicest.
	%	%	%
Percentage of butters in grade class ..	45	60	46

These butters were biologically examined, using lactose agar, gelatine, wort agar, and lactose gentian violet bile salt broth; and those with a total count of less than 50,000 colonies per millilitre, less than 100 yeasts per ml., and Coliform bacteria absent in 0·1 ml., have been grouped as before. It is considered that contamination up to this magnitude, though possibly potentially serious, would not have perceptibly affected the quality up to the time of grading.

Table IV.—Butters.—Grade pH.

pH Range.	93 and over.		93—.		Below Choicest.		Total.
	No.	Per cent.	No.	Per cent.	No.	Per cent.	
6·0—6·4	1	8·3	0	..	6	19·3	7
6·5—6·9	2	16·7	1	11·1	5	16·1	8
7·0—7·4	4	33·4	2	22·2	7	22·5	13
7·5—7·9	2	16·7	6	66·7	9	29·2	17
8·0— +	3	24·9	0	..	4	12·9	7
	12	..	9	..	31	..	52
	23·1 per cent.		17·3 per cent.		59·6 per cent.		

pH Range 7·5 to 8·0 +.

Grade.	93.	93—.	Below Choicest.
	%	%	%
Percentage of butters in grade class	42	66	42

Ignoring the distinction between 93 and 93—, the figures are as follows:—

Table V.

pH Range.	Choicest.		Below Choicest.	
	No.	Per cent.	No.	Per cent.
6·0—6·4	1	4·8	6	19·3
6·5—6·9	3	14·3	5	16·1
7·0—7·4	6	28·2	7	22·5
7·5—7·9	8	38·4	9	29·2
8·0+	3	14·3	4	12·9

From these tables it would appear that the pH has no bearing on the initial grade, even when due allowance is made for bacterial contamination of the butters. It must be borne in mind that these were part of the general run of butters on these grading floors, and no special grading comments were requested.

In all, 89 of the butters were graded, and of these, nine received such remarks as "soda flavour", "bitter", "soapy". Of these, six had a pH of 8·0 or over, the other three lying in the range of 7·5—7·9. At the same time, there were 34 other butters having a pH of 7·5 or over, which were not commented on, 15 being graded as choicest.

Figures derived from a study of reports of London gradings of Victorian butters for the year 1937–1938 (August to April) are interesting from this aspect. Although he did not always penalize the butters, the grader has made comments designed to improve the quality sent overseas, and to indicate the butters desired. His remarks have been grouped into three sections—

(*a*) "Good", "bright", "butter character".

(*b*) "Dull", "flat", "process", "soda", &c.

(*c*) "Too acid".

Of 1,180 reports, 414 butters, or 35.1 per cent. were described as (*b*) ("flat" flavour, &c.). It is recognized that in a few instances the flatness may be due to other factors than low neutralization—e.g., excessive washing, and therefore a further distinction was made—

205 butters (17·4 per cent.) received definite comment such as "soda", "neutral", "soda process", &c.

15 butters (1·3 per cent.) were too high in acid, while

234, or 19·8 per cent., were reported as "full flavour", "lactic characteristic", and "bright".

Comparing these figures with those previously given of the 1938 survey, 46 per cent. with a pH of 7·5 and over, and 15·6 per cent. with a pH of 8·0 and over, there is shown definite evidence of the effect of low neutralization. It would appear that the "process" flavour (meaning "neutralizing" flavour), does not disappear during the period of cold storage on shipboard, but is, on the contrary, accentuated.

In summing up, one is led to the conclusion that there is a tendency to over-neutralize the cream—whether deliberately aimed at or due to faulty processing is not quite clear at the moment. It is even possible that other factors are responsible. At present, there is a need for checking the acidity of the butter itself before export,

[*Continued on page 241.*

Irrigation at Kerang

(continued from page 212)

Exhibit A was a stand which had been sown down in August, 1935, with 10 lb. seed and 1 bag of manure. Top-dressing during 1936 and 1937 was at the rate of 1 bag of super. per acre in January, and another bag in August. In August, 1938, two bags of super. per acre were applied and another bag per acre had been applied in January of this year. Growth on this area was not quite so uniform as on the other, but was little inferior in other respects to the winning exhibit. In previous seasons the spring growth had been cut and succeeding growths had been grazed off by dairy cows. On not a few occasions the total area of 17 acres had provided grazing for 60 cows for from a week to ten days. Care was taken never to graze the stand too closely. This season the stand has been cut more frequently, this having been made possible by new paddocks having been laid down in pasture providing more grazing for the dairy herd. The result of this policy is to be seen in a well-filled stack yard on the property. This particular area was laid out in bays 40 feet wide and about 6 chains long. The supply and drainage channels were rather big compared with those in the winning area. The only weeds were located on the checkbanks. A little rye-grass had been introduced into the stand by the stock, and this would not be a disadvantage in any little area which might thin out in the future, as this grass would be much preferable to "windmill" grass. About eight or nine waterings had been applied during the season up to the time of the February inspection, at which time the fourth growth for the season was in evidence.

Mr. C. H. McDonald, of Myall, exhibited a very good stand of lucerne which had been sown on fallow in the spring of 1936. The previous year an excellent crop of rape had been grown in this paddock. In addition to 10 lb. of lucerne seed,

Well protected fodder reserves on Mr. C. H. McDonald's farm, Myall.

KERANG LUCERNE COMPETITION, 1938–39.

Details of Award (Two Inspections).

Competitor.	Layout for Irrigation and Condition of Channels.	Apparent Yield.	Quality of the Fodder it should Produce.	Uniformity.	Freedom from Weeds.	Total.	Grand Total.
Maximum points	20	20	20	20	20	100	200
Wilkinson and McDonald (B) ..	19	19½	20	18	19½	96	189
	19	17	19	19	19	93	
Wilkinson and McDonald (A) ..	18	18	20	17	19	92	183
	18	17	19	18	19	91	
C. H. McDonald	17	17	20	17	19	90	179
	17	17	20	18	17	89	
G. R. Morton	17	17	18	17	17	86	173
	17	15	18	18	19	87	
A. J. Morton	18	17½	19	17	18½	90	170
	17	14	16	16	17	80	

NOTE.—Award for spring inspection given first in each case.

3 lb. of perennial rye-grass, 2 lb. of cocksfoot and ½ lb. of white clover seed had been sown, the idea being that as the lucerne thinned out pasture would replace it. As these species were well represented throughout the stand of lucerne there was apparently some justification for this procedure.

At the spring inspection, although the stand had been cut only a fortnight previously, there was an excellent growth of fresh green lucerne, the uniformity being spoiled only by small areas where water tended to lodge. This effect had been accentuated by the very long bays, although provision had been made for drainage at the ends of the bays. Top-dressing is carried out regularly, one bag of super. per acre having been used at seeding, and 1 cwt. per acre being applied each autumn and another bag per acre each spring. This season an additional bag per acre was applied in January. The lucerne has never been grazed and excellent yields of good quality hay have been obtained. The hay is stored in a large, well-constructed hay shed.

At the inspection in February, Mr. McDonald was unfortunate in that again only the result of a short period of growth was in evidence. The lucerne had been watered only a week previously after having been cut for hay. At this inspection there was a fair amount of young wild millet and windmill grass throughout the stand, especially in the areas where the lucerne had been thinning out.

Perennial Pasture Awards.

Since irrigated pastures of perennial species constitute a fairly recent innovation in the Kerang district it was very encouraging to find some very good examples during the inspections. The experimental plots on the property of Mr. F. H. Kane have shown that very good results can be obtained provided that a system of judicious grazing management is employed. The early history of the plots revealed that unsatisfactory development of a pasture sward would result on these heavy soil types if too severe grazing was carried out. Since the application of a regular system of fairly lenient grazing at reasonable intervals the pasture sward has been rehabilitated and each year the results have been progressively better. With the building up of fertility through liberal top-dressing with superphosphate the wild white clover is on the increase and this will enhance the midsummer production.

The value of lucerne as the predecessor to a perennial pasture was demonstrated very well by the winning pasture in this competition, exhibited by Mr. Glen Hall. In April of 1934 this paddock

Handling lucerne hay on the property of Mr. G. R. Morton, Benjeroop: 1. A full load of hay on a sweep. 2. Hay being transferred from sweep to stack builder. 3. Hay taken off sweep on to stack builder.

of 3 acres was scarified thoroughly and sown with a mixture of 10 lb. Hawke's Bay perennial rye-grass, 5 lb. Cocksfoot, 2 lb. New Zealand white clover, and 1 lb. New Zealand red clover. Since then a little prairie grass and a fair amount of a local type of wild white clover has intruded. The pasture is manured each autumn with one bag of super. per acre. The bays are fairly wide, but as there is very little fall this is not a very great disadvantage. The channel had been cleaned out regularly and kept free from weeds. In midsummer during hot weather as little as ten days elapsed between irrigations. In a few low spots there was a little *Paspalum dilatatum*, and on the check-banks odd plants of lucerne still persisted.

At the spring inspection a luscious growth of grass was seen, and this was eventually cut for hay seven weeks after the previous grazing, yielding over 4 tons of prime quality hay from the 3 acres. During the rest of the year the paddock being conveniently placed in relation to the buildings, was used as a night paddock for fourteen cows. It was never over-grazed, and at times had to be cleaned up with about 40 cattle for a short period. All species sown, with the exception of red clover, were well represented in the sward and very few weeds were present. At the inspection in February the pasture was not so rank and was in freshly growing condition. A few docks were the only noticeable weeds. On Mr. Hall's home block of 203 acres there are 15 acres of lucerne, 50 acres of Wimmera rye-grass and Subterranean clover pasture, and 40 acres of perennial pasture, the remainder being used for cropping, oats, millet, &c. During the previous season, 50 head of cattle (over 30 dairy cows) and 300 ewes had been carried, and 250 lambs had been fattened. Considerable reserves of hay were on hand. Recently Mr. Hall has given up dairying and intends to concentrate on the raising of fat lambs.

Part of the perennial pasture area is on country which is liable to flooding with irrigation water. Among the rushes a fair amount of *Paspalum dilatatum* had become established. By the introduction of white and strawberry clovers and liberal top-dressing with superphosphate this area has been transformed into a very high-carrying capacity pasture. Gradually the rushes are receding and the paspalum and clover sward taking their place.

At the spring inspection Mr. E. Thompson of Teal Point exhibited an excellent pasture which had been sown on fallow in the autumn of 1937 with 10 lb. Hawke's Bay perennial rye-grass, 5 lb. cocksfoot, 5 lb. prairie grass, 5 lb. lucerne, 1 lb. New Zealand white clover, 1 lb. alsyke, and ½ lb. subterranean clover. One bag of super. per acre had been used at seeding and 2 cwt. per acre had been applied in the autumn and again in the spring of 1938. The pasture was watered nearly every week during the first summer as the soil is not very permeable and soon dries out. There was a wonderful development of practically all the species with the lucerne tending to mask the others. The pasture was at the hay stage, and had been cut for hay in the previous spring. During the rest of the year the whole area of 15 acres had provided grazing for 50 cows one week out of four.

At the inspection in February it was very disappointing to find that Mr. Thompson had had the misfortune to have been away in hospital and in his absence the paddock had languished for water. The sward had opened up badly as a result and most of the white clover had died. Owing to Mr. Thompson having sown the subterranean clover, however, there was a considerable sprinkling of seedlings of this species throughout the pasture, and this together with the lucerne

PERENNIAL PASTURE COMPETITION, KERANG, 1938–39.

Details of Award (Two Inspections).

Competitor.	Layout for Irrigation and Condition of Channels.	Condition of Pasture.	Uniformity.	Mixture.	Freedom from Weeds.	Total.	Grand Total.
Maximum points	20	20	20	20	20	100	200
1. Glen Hall	17	18	18	18	19	90	180
	17	19	18	18	18	90	
2. E. A. Thompson	17	18	18	19	18	90	172
	17	16	17	15	17	82	
3. G. R. Morton	17	18	18	18	18	89	170
	17	16	17	15	16	81	
Morrison Bros.	18	17	17	18	19	89	170
	17	16	16	17	15	81	
4. Wilkinson and McDonald (A) ..	18	16	18	15	16	83	168
	18	17	18	15	17	85	
5. Wilkinson and McDonald (B) ..	18	17	18	16	17	86	167
	18	16	16	16	15	81	
6. F. H. Kane	18	19	16	16	18	87	162
	18	14	14	14	15	75	
7. Shepard Bros.	15	19	15	18	16	83	158
	14	17	13	17	14	75	

NOTE.—Award for spring inspection given first in each case.

would ensure that a fair amount of feed would be obtained from the paddock until the sward eventually became rehabilitated.

Very promising pastures were exhibited by Mr. G. Morton, of Benjeroop, and the Messrs. Morrison, of Murrabit West, but there was evidence of over-grazing in these cases. These pastures could be built up by good management to very high-carrying capacity since the basis to work on is there already.

Acidity of Victorian Butters *continued from page 237.*

with the aim of standardizing the acidity within a reasonable range. Whether this control should be established at the factory or centrally at the export floor is a moot point; at present it seems more suited to a central laboratory, and could be carried out in conjunction with moisture testing.

The determination of pH is of too exacting a nature to be carried out in the smaller factories, but there the equally useful acidity test of Nissen could quite readily be used by a careful worker. Even for comprehensive control work, much less equipment and considerably less time is required to carry out this test. The slight variation in the end-point of the titration and the "drift" in pH mitigate against a perfect correlation between titratable acidity and pH of butter, as is shown by the chart; but the correlation obtained is quite close enough to demonstrate the possibility of the adoption of the more simple method as a control measure.

Conclusions.

1. The mean pH of Victorian butters has shown considerable movement towards the alkaline scale since the first determinations were made in 1933; indicating the tendency to neutralize the cream to a low figure. Errors in the process of neutralizing are probably a contributory factor to the incidence of alkaline butters.

2. No correlation between pH and grade can be found, even when biological deterioration is taken into account.

3. There has been a high percentage of butters reported from London as "process soda" or "neutral" flavour; and a still more alarming figure as "flat" and "dull".

4. Some control of acidity seems desirable, either at and by the factory or at the grading floors.

5. The correlation between pH and titratable acidity, found by previous workers, is confirmed, and it is suggested that the determination of titratable acidity is a sound and simple method of acidity control.

6. More work on relation of acidity of cream and acidity of resulting butters is desirable.

Wireless Talks for Farmers

WITH the co-operation of the Australian Broadcasting Commission, the Victorian Department of Agriculture is conducting a series of wireless talks on subjects of particular interest to the man on the land. These talks are being broadcast from the regional stations, 2CO (Corowa), 3GI (Gippsland), and 3WV (Horsham) on Friday evenings, the 15-minute sessions commencing at 7.40 p.m.

The next talks will be on 19th May, 9th June, and 23rd June.

In order that these talks might be of maximum value to the farming community the Department is anxious to have the co-operation of listeners, who are invited to submit questions they would like answered over the air. If you have any particular problem connected with the management of your farm, your crops, or your live stock, or with the marketing of your produce, send a letter to Mr. J. Keane, B.Agr.Sc., Department of Agriculture, Melbourne. Your problem will then be submitted to expert officers of the Department, whose advice will be given. If you do not desire your name broadcast use initials or a nom-de-plume, but do not omit to mention your district.

Red Scale of Citrus

Second Progress Report

By C. J. R. Johnston, B.Agr.Sc., and T. W. Hogan, B.Agr.Sc., Assistant Entomologists.

THE Red Scale (*Aonidiella aurantii* Mask.) is regarded as the most serious entomological problem in the citrus industry of Victoria at the present time. Control methods for this insect are costly and represent a large proportion of the cost of production on all but the highest yielding groves.

In the past, there has been a lack of precise local information on the habits of the insect, and the factors governing the effectiveness of insecticidal materials and their methods of application, with the result that there has been great variability in the results obtained. No experimental or commercial treatments or repetition of treatments up to the present have succeeded in producing 100 per cent. kill of red scale in any citrus grove inspected.

It has been shown by experiment, and by general observation, that the materials in commercial use at the moment have produced approximately the same percentage kill of red scale in all seasons of the year. During the late spring months of the year, however, the tree and the crop are susceptible to damage by scalicidal treatments.

Experimental work directed at obtaining precise information upon many local aspects of red scale control was inaugurated by the Victorian Department of Agriculture in 1935. The following lines of approach to the problem are under investigation:—

1. A comparison of the scalicidal efficiencies of commercial fumigating materials and petroleum spraying oils, and an attempt to correlate toxical effects on trees and pests with physical and chemical properties of the materials.

2. A comparison of the scalicidal efficiency of (*a*) one fumigating material; (*b*) one spraying oil; and (*c*) combinations of (*a*) and (*b*) when applied at several concentration levels.

3. The determination of the time or times of the year at which it is most advantageous to apply (*a*) a single treatment per year; (*b*) two treatments per year; and (*c*) three or four low-strength treatments per year.

4. The possibility of complete elimination of the insect from a grove or alternatively of producing a high proportion of commercially clean fruit at lower than present costs by (*a*) the annual repetition of certain fixed schedules, or (*b*) the use in alternate years of the fumigation method of treatment and the spraying method.

5. Bionomics of the insect. (*a*) A study of the life history and habits of the insect, especially its rate of multiplication, survival, and dispersion intra- and inter-grove; (*b*) The relation between the stage of the insect's development and its susceptibility to various intensity levels of the insecticidal materials used.

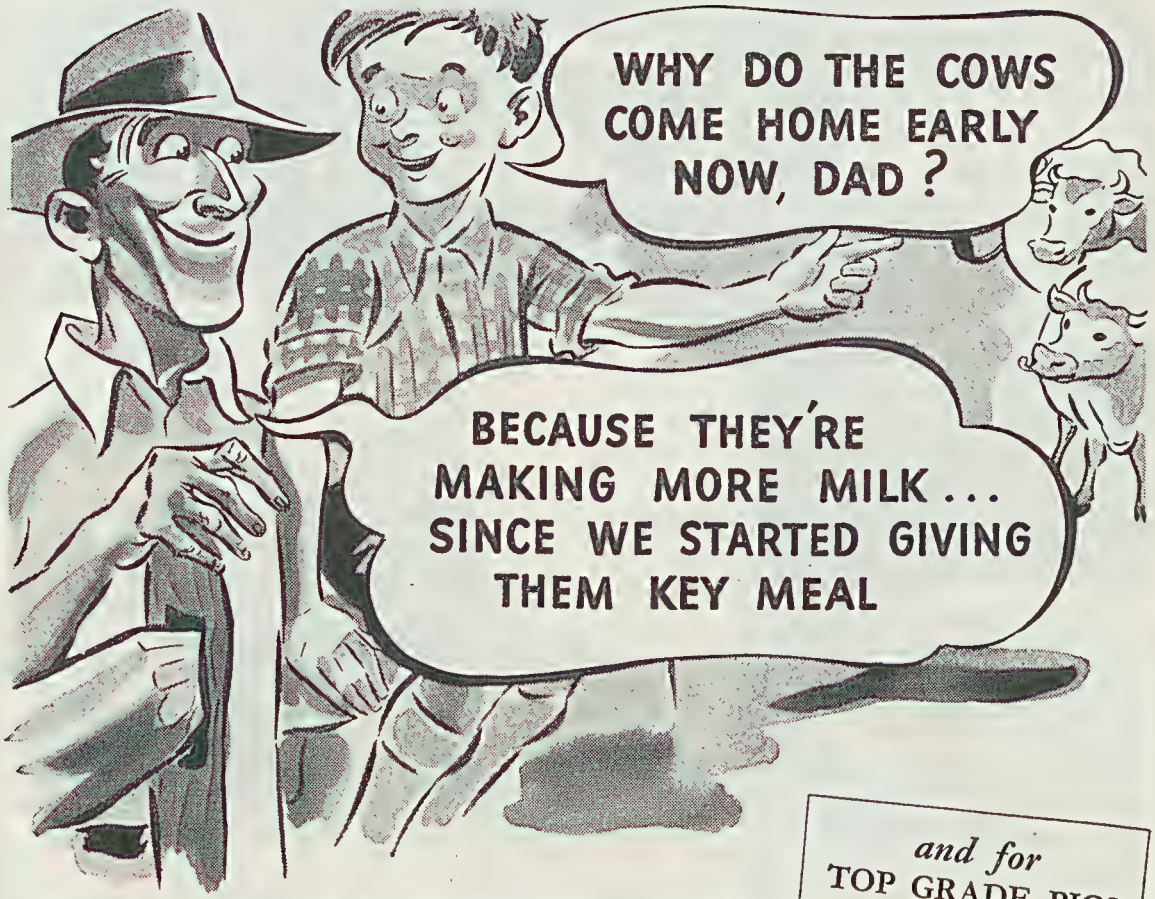
The first progress report of this investigation in Victoria was published in the August, 1937, issue of this *Journal*, and covered the work completed to October, 1936. The work was discussed in three main sections.

A. Life history studies of the insect in the field and in the insectary.
B. Laboratory and field studies of white spraying oils at Bamawm.
C. Field studies of hydrocyanic acid gas fumigation.

The present report covers experimental work conducted in the season 1936-37, and finalized in December, 1937. This report also covers results from two additional phases of the work, viz.:—

D. Spray-fumigation in which thorough oil spraying was followed in the same season by standard fumigation.
E. Comment on a district survey of the Mildura citrus area with reference to red scale control.

The technique employed has been much as formerly, and for details of this the previous report should be consulted. Where possible, the numbers of replicates of any treatment were increased, also a new system of aspirators was adapted for sampling the HCN gas in the tent-covered trees. The cans of the aspirator, which are similar to those used by Quayle and Knight for this work, are illustrated in Fig. 3.



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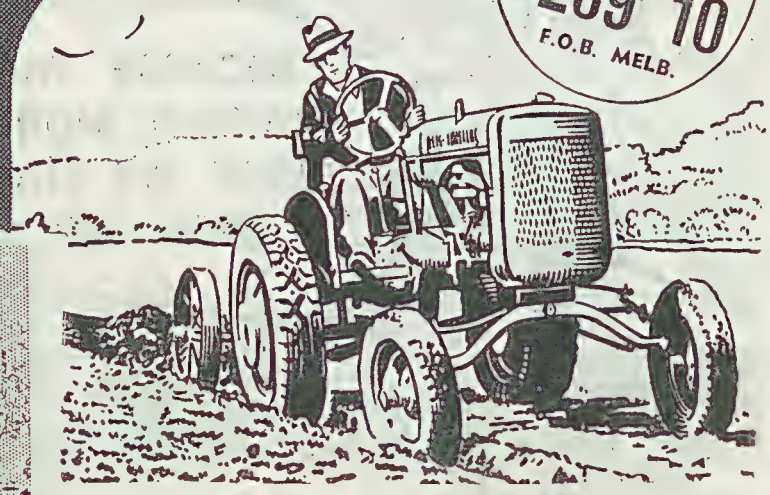

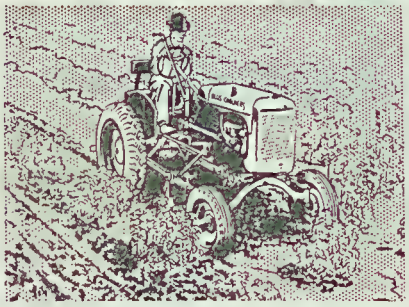

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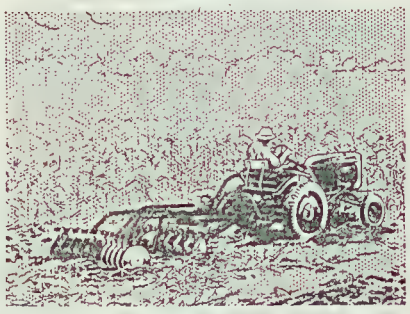

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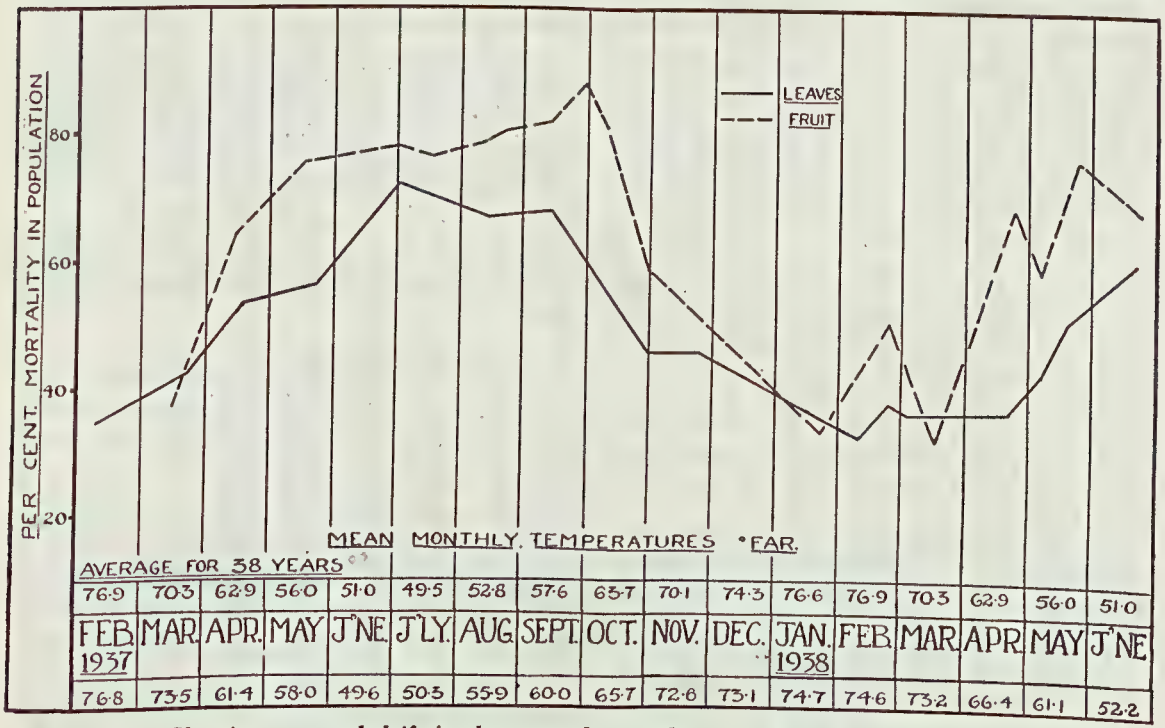
Life history observations at Burnley, in 1935-36, showed the female scale to be viviparous, producing young at an average rate of 2.5 per day. The maximum number of young from one female in any one day was ten crawlers and for its lifetime 145 crawlers. These insectary studies were in abeyance during 1937 owing to the heavy programme of field experiments at Mildura and Bamawm. They were recommenced in April, 1938, and are being directed toward gaining a better understanding of the insects' habits of growth and reproduction in relation to temperature, &c. This information will be used in conjunction with field and insectary trials of control-schedules and insecticides.

Field Studies.

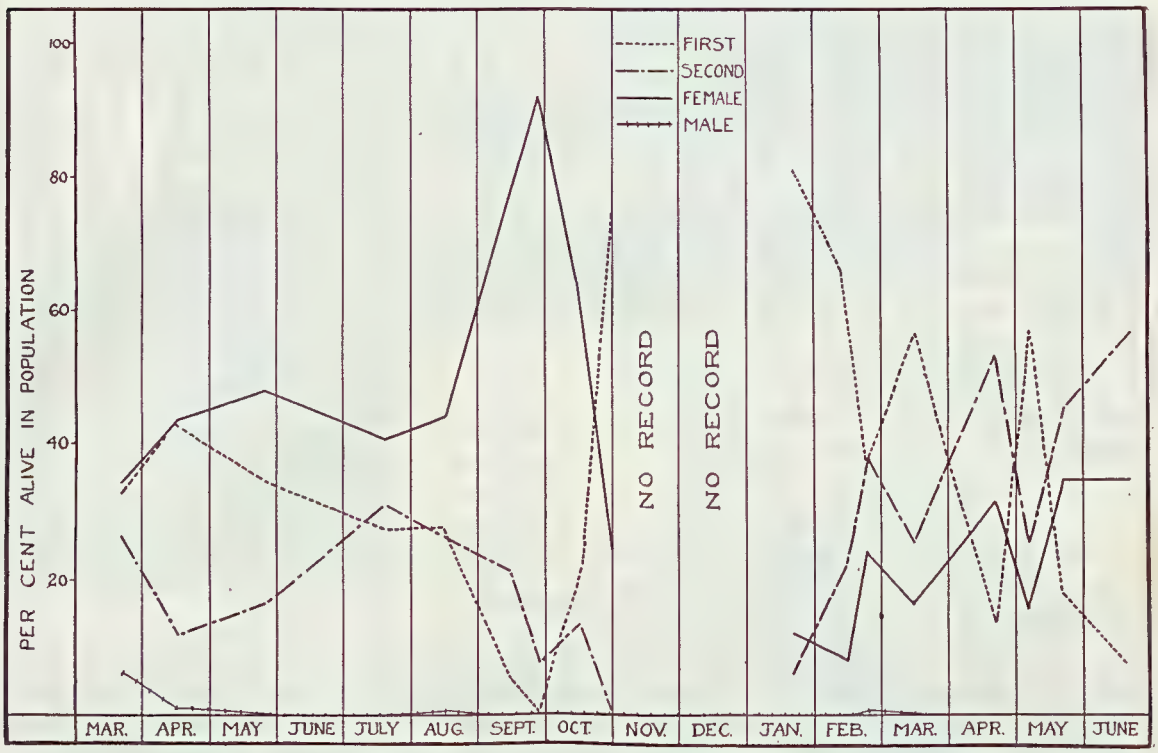
In the field, studies have been furthered by a monthly or fortnightly census of the instars present in the scale population, and a record of the seasonal drift of the natural mortality status on untreated trees at Red Cliffs. Leaves and fruits were taken to Burnley laboratory for microscopical examinations.

The average mortality in the scale population on leaves and fruit trees which have not been given any insecticidal treatment is shown for a seventeen-months' period in Graph 1. The peak of mortality occurred six weeks earlier at Red Cliffs, in 1937, than at Bamawm, in 1936. Owing to the favorable winter, the activity of the lady-bird predator (*Lophanthae* sp.) and its larva was very marked. This predator definitely increased the scale mortality on fruit during the winter and especially so in September. The warmer spring of 1937, however, also brought about an early activity of the scale; the first appreciable record of white caps (successfully established young scale) from Red Cliffs and Merbein was made from samples of fruit picked on the 10th of October, 1937. This increase in young resulted conversely in a rapid reduction in the percentage mortality from October onward. The steady falling of detached dead insects tends to give the same effect.

In can be seen from the temperature records accompanying Graph 1 that there was a rapid rise of average temperatures from August to December. Growth of the insect was extremely slow at any temperature below 55°F.


PER CENT. MORTALITY IN POPULATION
80
60
40
20
LEAVES
FRUIT
MEAN MONTHLY TEMPERATURES °FAR.
AVERAGE FOR 38 YEARS
76·9 70·3 62·9 56·0 51·0 49·5 52·8 57·6 65·7 70·1 74·3 76·6 76·9 70·3 62·9 56·0 51·0
FEB. 1937 MAR. APR. MAY J'NE. J'LY. AUG. SEPT. OCT. NOV. DEC. JAN. 1938 FEB. MAR. APR. MAY J'NE
76·8 73·5 61·4 58·0 49·6 50·3 55·9 60·0 65·7 72·6 73·1 74·7 74·6 73·2 66·4 61·1 52·2

Graph 1.—Showing seasonal drift in the natural mortality of red scale at Red Cliffs, 1937-38, and daily mean maximum-minimum temperatures averaged at monthly intervals for the same period. Mean monthly average temperatures for 38 years are also shown.



Graph 2.—Showing proportions of first instar, second instar, and adult male and female scales in the live population on fruit, Red Cliffs 1937-38.

Reproduction from females fertilized in the spring did not commence in any quantity until November and December, those crawlers produced in October being offspring from females fertilized in the previous autumn.

The March to May average monthly temperatures in 1938 were 3° to 5°F. warmer than the 38 year average temperatures and delayed the rise of the mortality in these months. The comparatively warm autumn also gave a high proportion of immature stages late in the season. This is shown on Graph 2 which is concerned only with the live insects on the tree, and in which the living first, second, and adult female and male stages are each expressed as a percentage of the total live population.

With rising temperatures the proportion of first stage insects on fruit fell rapidly, reaching zero by the end of September (1937). This was due to the insects' development and a changing over from first instar to the second instar group. This latter group had also completely developed to morphological maturity by the end of October, and began to reproduce about mid-December. The drift of mortality within each instar is shown in Fig. 1.

The natural mortality of the males is high and the extent of this proportion is increased a little by the fact that the male leaves its armoured scale some three to six days after the last moult, while most of the dead adult males which fail to emerge remain to be recorded by the census. All immature males between the first moult and last moults are classed as second instar for purposes of this report.

Oil Spraying Tests—Bamawm.

Strength and time of application of spray tests were commenced in December, 1935, with trees of Navel variety, on the property of Mr. F. D. Brown, Bamawm. The first season's work was concerned only with time of application of a standard 1 in 40 ($2\frac{1}{2}$ per cent.) spray, and results showed that a reasonably good kill of scale was obtained at all three points, early-summer, mid-summer, and autumn.

As the autumn sprays in 1936 were applied after the fruit had become thoroughly infested, they did not affect the production of clean fruit in that season. Their effect on control,

however, was clearly shown by the increased proportion of clean fruit in the 1937 crop from the trees given schedules (*c*) and (*d*), Table 1.

TABLE 1.—SHOWING EFFECT OF SPRAY SCHEDULES ON SCALE INFESTATION OF NAVEL CROP AT BAMAWM.

Time and Strength of Application of Spray.		Clean Fruit.		Clean and Lightly Infested Fruit.	
		1935–6.	1936–7.	1935–6.	1936–7.
	%	%	%	%	%
(*a*) Dec. only ..	2½	10·5	24·8	38·4	87·2
(*b*) Dec. and Jan. ..	2½	27·1	57·2	60·4	97·0
(*c*) Dec. and March ..	2½	10·2	76·8	40·1	98·7
(*d*) March only ..	2½	0·1	19·3	8·5	90·2
(*e*) *Dec., Jan., Feb., and March ..	1¼	0·1	86·8	8·5	99·9
(*f*) *Dec., Jan., Feb., and March ..	1½	0·1	88·7	8·5	100·0

* Not sprayed in 1935–6.

Differences in percentages of clean fruit between treatments which are greater than 6·6 per cent. in 1936, or 11·9 per cent. in 1937 are statistically significant.

The percentage of clean (scale free) fruit in the second year of these tests from trees given schedule (*d*) improved much more than that from schedule (*a*). A similar effect was shown by the greater improvement in the proportion of clean fruit in the second year from schedule (*c*) than that from schedule (*b*).

In Table 1 also are shown results from two additional schedules introduced in 1936, viz.:—

(*e*) Four applications of 1¼ per cent. spray (1 gallon oil emulsion in 80 gallons spray).

(*f*) Four applications of 1½ per cent. spray (1 gallon oil emulsion in 67 gallons spray).

Dates of application were 18th December, 24th January, 1st March, and 3rd April. (The prescribed dates of treatments for February and March had to be postponed until early in March and April owing to interference from such routine orchard practices as irrigation, the time of which could not be accurately forecast at the beginning of the season.) The sixteen trees used for these two schedules had not been sprayed in the previous season and were heavily infested. Notwithstanding this heavy infestation, when first sprayed in December, 1936, a very high proportion of clean fruit was obtained at picking time in August and September, 1937.

The new schedules were planned as a result of the Burnley insectary studies of red scale life history taken in conjunction with the observation that about 80 per cent. of the scales surviving any treatments were adults. Efforts then were directed, not toward a high percentage kill of adults but, instead, it was hoped to kill off the young insects at each spraying before they developed to the stage in which they showed a measure of resistance to the spray. Also there are always a few adult females in positions inaccessible to the spray;

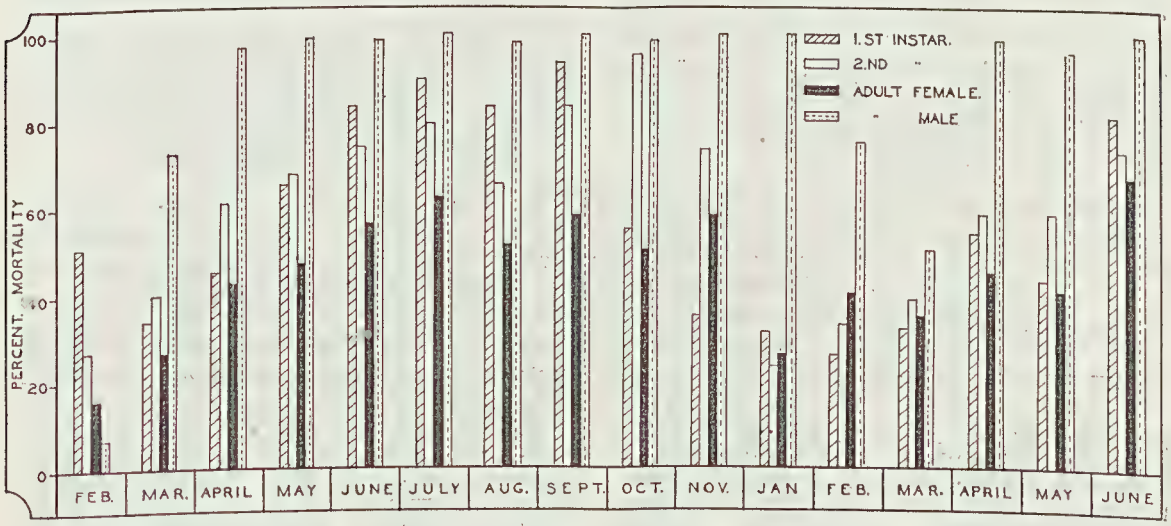


Fig. 1.—Showing seasonal natural mortality in each instar for the period February, 1937, to June, 1938.

the progeny of these are killed off and they themselves mostly die naturally during the three-months' period of treatments.

The necessity for securing a high proportion of clean fruit in the same season as the treatment is given is important to the growers' immediate interest. This was achieved by schedules (*e*) and (*f*), using four dilute (1-67 and 1-80) sprays instead of two full-strength applications of 1 in 40. The percentage of clean fruit at harvest from this three-interval method (see Table 1) was higher in the first season than that from schedules (*a*) to (*d*) after two seasons.

Closer attention to the rate of development of the insect itself in the field and to the seasonal rate of population increase may show that the time interval between sprays could be lengthened with a view to eliminating one time of treatment. Alternatively, a further reduction of oil concentration may be possible.

It is considered that this method of scale control may offer, to the small grower in particular, a means of rapidly reducing scale population, i.e., in one season. From inspection of the 1937-38 crop, while on the tree, it was evident that good results had been obtained with three applications instead of four, and it was expected that almost 100 per cent. commercially clean fruit would be harvested.

The spraying at Bamawm was carried out by a local orchardist and contractor using a standard 100-gallon vat and pump operated at a pressure of 360 to 420 lb. per square inch and equipped with spray-rods. A feature of this plant was the use of a perforated rotor and a wide aperture in the nozzle spray disc giving a big volume of spray at high pressure. When moved quickly in the hand of a skilful operator this equipment gives a good cover without loss of spray material.

Oil Spraying Tests—Mildura.

Time of spraying trials were conducted in the Mildura district. The following schedules were applied:—(*a*) February only; (*b*) February and March; (*c*) February and April; (*d*) February and May; (*e*) February and August. Eight single-tree replicates of each treatment were used.

These experiments were established on the property of Mr. L. Wilkinson, Block 249A, at Red Cliffs. The trees were eighteen-year-old Valencias, closely planted (20 x 18). They bore very dense foliage and strong lateral growth. While these latter features indicated very favorable growth conditions for citrus, the close planting and good growth combined to make scale control in the past few years very difficult. Thus the site provided a rigorous test for the spray schedules employed, together with ample population upon which to make determinations of scale kill.

The trees were examined to determine the natural mortality of the scale population before any treatment was given. This was necessary because insects which die from any cause whatever remain attached to the leaves and fruit for many months, and a proportion will remain attached for even two years. Mortality was again determined six to seven weeks after treatment and the calculation of percentage kill was based on the proportion of live insects present before treatment.

In this series of trials a standard commercial stock emulsion of summer white oil was used throughout the season, and at a uniform dilution of 1 gallon of emulsion to 40 gallons of spray.

In Table 2 is shown the percentage of scale insects killed by each schedule, and the results from classification of the fruit crop according to degree of scale infestation when harvested in November and December, 1937.

TABLE 2.—TIME OF SPRAYING TRIALS, 1937 (L. WILKINSON, RED CLIFFS).—SCALE MORTALITY AND CLASSIFICATION OF CROP.—RESULTS FROM EIGHT TREES PER SCHEDULE.

Months Sprayed. (2½ Per Cent. White Oil Emulsion).	Mortality Produced on—		Proportions of Clean and Scale Infested Fruit.				
	Leaves.	Fruit.	Clean.	Light.	Medium.	Heavy.	Clean and Light.
	%	%	%	%	%	%	%
(*a*) February only	93·8	78·9	0·7	55·7	23·8	19·8	56·4
(*b*) February and March ..	99·5	86·2	20·2	63·6	8·3	7·9	83·8
(*c*) February and April ..	99·9	86·3	6·4	68·3	20·1	5·2	74·7
(*d*) February and May	99·8	89·2	4·4	77·9	10·7	7·0	82·3
(*e*) February and August ..	99·9	92·4	2·5	80·0	14·4	3·1	82·5

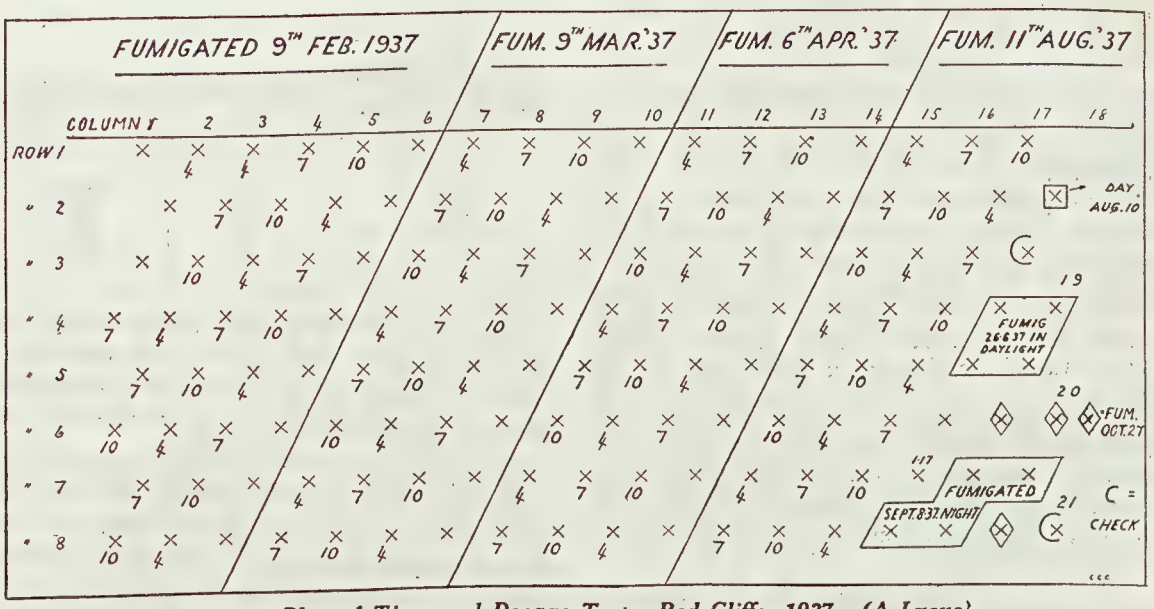


Fig. 2.—Plan of Time and Dosage Tests, Red Cliffs, 1937. (A Lucus)

That a single summer spraying is of little value was indicated by the low kill of scale on both leaves and fruit from "February only" treatment. This was further emphasized by the fact that, at picking time, the scale population on fruit from this schedule was high and consisted of a large proportion of live insects.

With schedules (*b*), (*c*), (*d*), (*e*), excellent kills were obtained on the leaves, while on fruit the kill was not so satisfactory. With the Navel variety this would not be important but for Valencia fruit it is the key to the control situation. When Valencias are allowed to remain until December or later on the tree, a generation of young scales is born to the survivors of scalicidal treatment. Some of these young, by December are moving on to the new season's leaves and fruit, thus perpetuating the pest.

Because a heavy scale infestation of the fruit on these trees had developed before the first spray was applied, it was only to be expected that the fruit would still be infested at the time of picking. Hence, the information obtained from the classification of fruit, according to the degree of scale infestation, would not necessarily represent an index of the degree of control obtained. The control value of the second application of spray in April, May, and August was apparent however on the 1937-38 crop.

For the 1938 season all spray schedules were moved three weeks ahead, the first spray being given on 18th January.

Fumigation Experiments.

Dosage rate and time of fumigation tests were conducted in 1936 at Mildura using liquid hydrocyanic acid. The four dosage-rates used were (1) Chart Standard of 16 cc. per unit; (2) Standard, less 12.5 per cent.; (3) Standard, plus 12.5 per cent.; (4) Standard, plus 37.5 per cent. No significant difference was found between the kills produced by the highest and the lowest rates used.

Since the major part of the district's commercial fumigation is carried out with the Calcid briquette form of calcium cyanide, it was considered that experimental results could be more readily related to local problems by using these briquettes in the 1937 dosage tests. Thus on selecting a suitable grove, a series of experiments was planned which allowed of eight one-tree-plot replicates of each of the three dosage-rates. The time-of-season factor was introduced by carrying out this dosage test in February, and repeating it in March, April, and August. Twenty-four different trees were treated in each month. A buffer row of eight trees separated the groups treated in each of the four months (see Fig. 2.).

Mr. A. Lucas' grove at Red Cliffs was selected, after a large number of properties

had been examined by officers of the Agricultural Department and members of the local Red Scale Committee. This grove was considered desirable because alternate rows were planted with Navel and Valencia varieties and the trees were evenly and severely scale infested.

The largest trees averaged 27 feet over and 40 feet around, and according to the Calcid briquette standard summer chart required a dose of six briquettes. To avoid using fractions of a briquette and other complications with the smaller trees, uniform volume was assured by fitting all trees with frames, 27 feet x 40 feet, before covering them with the fumigation sheet. It was considered that this did not interfere with the results obtained and the conclusions drawn. For moving from one tree to another the frame was divided into halves, vertically, one half being carried easily by two men.

Trees remained covered by the tents or sheets for 45 minutes after blowing in the dose of cyanide. During this 45-minute period samples of the air were drawn from the tent for analysis. This enabled the behaviour of the HCN gas to be studied. Results of these observations will be referred to in a subsequent section on gas concentration.

Briquette dosages used in this experiment are shown in Table 3, together with the actual dose per tree and its equivalent HCN value, in terms of cubic centimeters (c.c.) of liquid HCN, as used in California.

Table 3.—Details of Dosage Tests.

Dosage rates Expressed as Percentage of Standard Chart Rate.	Number of Briquettes per Six-briquette Tree.	Equivalent Volume of Liquid HCN.
%		c.c.
67	4	59
117	7	104
167	10	148

The most outstanding results from this experiment were that in no case was severe damage caused by the the cyanide given, while on the other hand 100 per cent. kill was not achieved by the highest dosage.

In Table 4 is shown the percentage kill of scale on fruit for each dosage and time of treatment. The figures for February are not comparable with those for the other months of treatment, because the "February" trees carried a light crop, and fruit samples were not taken for determination till harvest time, five months after treatment. In the interval, survivors had produced a generation of young insects, thus reducing the apparent percentage kill figures considerably.

The results from February treatment show that, although early treatment is essential to produce commercially clean fruit from heavily-infested trees, it also allows fully half a breeding season for females, which escape the treatment, to reproduce and effectively re-infest the tree for the next season. An autumn or

Table 4.—Fumigation Experiments.—Time and Dosage Tests Showing Percentage Kill of Red Scale on Fruit (A. Lucas, Red Cliffs).

Month of Treatment.	4 Briquettes.			7 Briquettes.			10 Briquettes.			Mean Percentage Kill for Month and Variety.	Mean Percentage Kill for Each Month.
	Variety.	Percentage Kill.	Average Percentage.	Variety.	Percentage Kill.	Average Percentage.	Variety.	Percentage Kill.	Average Percentage.		
		%	%		%	%		%	%	%	%
February	Navel	83·4	70·1	Navel	94·5	82·7	Navel	91·2	82·7	89·7	78·5
	Valencia	56·7		Valencia	71·0		Valencia	74·3		67·3	
March	Navel	98·3	98·4	Navel	98·7	99·1	Navel	99·3	99·2	98·8	98·9
	Valencia	98·5		Valencia	99·4		Valencia	99·1		99·0	
April	Navel	98·1	98·0	Navel	97·3	98·1	Navel	99·6	99·4	98·5	98·5
	Valencia	97·8		Valencia	98·9		Valencia	99·1		98·6	
August	Navel	98·8	98·0	Navel	99·6	99·5	Navel	99·9	99·7	99·4	98·6
	Valencia	97·1		Valencia	99·4		Valencia	99·5		98·7	
Average per cent. kill	Navel	98·4	98·1	Navel	98·5	98·9	Navel	99·6	99·4	98·9	98·8
	Valencia	97·8		Valencia	99·3		Valencia	99·3		98·8	

winter treatment thus becomes necessary for control, as distinct from production of commercially clean fruit in the season treatment is given. With the exception of the April tests, no practical difference in kill was caused by any one dosage over another. Also, there was no significant difference between the percentages of insects killed on Navel and on Valencia fruits. For April treatment the kill produced by 167 per cent. of the standard (ten briquettes) was significantly greater than that by dosages of 67 per cent. and 117 per cent. of the standard.

March, April, and August treatments show fairly satisfactory percentage kill. This suggests that autumn and winter treatment could satisfactorily replace the late spring treatment which latter is linked with so much risk to the tree and more particularly to the crop. Early treatment of scale eventually may mean treatment in the autumn and late winter. This in actual fact would be earlier in the life of 90 per cent. of the insects than would an October treatment.

This is illustrated by the Graph 2 which represents the relative proportions of the various stages of the insects comprising the living scale population. The vast majority of the adult insects on a tree in September were already on the tree in the previous late autumn, i.e., were born before June. The scales surviving this autumn or winter treatment again will be reduced by natural winter conditions, and the balance will not reproduce appreciably until the full summer warmth returns.

In these tests equally good kills were obtained on leaves in February, March, and August; April kill was not as good. In this month also the kill on Valencia leaves was lower than on Navel leaves. This varietal effect on scale kill did not appear on fruit in March, April, and August. The kill of scale on leaves was not so good as that on fruit (see Table 5).

The popular feeling that poorer kill is obtained on Valencias received very slight support in these tests. It was evident, however, from observation that nothing but an exceedingly low population was safe on Valencia trees, because a certain amount of reproduction occurred on the mature fruit in early summer before it was removed. Some of the young insects migrated to adjacent leaves and young fruits, and so escaped removal with the mature crop.

The experiments described above do not suggest any reasons why a semi-mature or mature crop of Valencia fruit should not be fumigated. On the contrary, it would seem important that an autumn treatment should be given if a few live adults are visible on the fruit in February. These few mature adults will produce, in the ensuing two months, young scales which, although definitely established on the fruit, will often escape the grower's observation. Yet, without any appreciable reproduction after 1st June, the

TABLE 5.—FUMIGATION EXPERIMENTS, TIME AND DOSAGE TESTS SHOWING PERCENTAGE KILL OF RED SCALE ON LEAVES (A. LUCAS, RED CLIFFS).

Month of Treatment.	4 Briquettes.			7 Briquettes.			10 Briquettes.			Mean Percentage Kill for Month and Variety.	Mean Percentage Kill for Each Month.
	Variety.	Percentage Kill.	Average Percentage.	Variety.	Percentage Kill.	Average Percentage.	Variety.	Percentage Kill.	Average Percentage.		
		%	%		%	%		%	%	%	%
February	Navel	99·0	98·5	Navel	98·9	99·3	Navel	98·9	98·8	98·9	98·9
	Valencia	97·9		Valencia	99·7		Valencia	98·7		98·8	
March	Navel	97·2	98·1	Navel	99·3	99·1	Navel	99·0	99·1	98·5	98·8
	Valencia	98·9		Valencia	98·9		Valencia	99·3		99·0	
April	Navel	97·3	96·5	Navel	97·9	97·8	Navel	99·9	98·3	98·4	97·5
	Valencia	95·6		Valencia	97·6		Valencia	96·6		96·6	
August	Navel	99·8	98·1	Navel	100·0	99·9	Navel	100·0	99·9	99·9	99·3
	Valencia	96·3		Valencia	99·8		Valencia	99·8		98·7	
Average per cent. kill	Navel	98·4	97·8	Navel	99·0	99·0	Navel	99·4	99·0	99·9	98·6
	Valencia	97·2		Valencia	99·0		Valencia	98·7		98·3	

TABLE 6.—DOSAGE RATE AND TIME OF FUMIGATION TESTS, 1937, SHOWING PROPORTION OF CLEAN, LIGHTLY, MEDIUM, AND HEAVILY INFESTED FRUIT.

Month Fumigated.	Briquettes per Tree.	Clean.	Light.	Medium.	Heavy.	Clean, plus Light.	Severity Index.
		%	%	%	%	%	
February	4	16·5	70·9	11·8	0·8	87·4	32·3
	6	27·8	66·1	5·5	0·6	93·9	26·3
	8	28·9	64·5	5·8	0·8	93·4	26·2
March	4	0·0	53·0	45·8	1·2	53·0	49·4
	7	0·0	50·6	48·5	0·9	50·6	50·3
	10	0·0	68·4	30·6	0·4	68·4	43·9
April	4	0·0	1·1	14·9	84·0	1·1	94·0
	7	0·0	3·2	18·5	78·3	3·2	91·7
	10	0·0	1·1	19·2	79·7	1·1	92·9
August	4	0·0	0·9	7·6	91·5	0·9	96·7
	7	0·0	0·5	9·7	89·8	0·5	96·4
	10	0·0	0·3	7·1	92·6	0·3	97·4

population on fruit will appear to increase owing to the maturation and increase in size of these formerly undetected young-instar insects.

Classification of Crop.—As the fruit was harvested from the test trees, it was classified into four groups, according to its degree of scale infestation. The results obtained are shown in Table 6.

Table 6 shows that the higher dosage rates had no useful effect in production of clean fruit in the year of application, although in February there was a small increase from 16.5 per cent. to 28.9 per cent. of clean fruit. The Severity Index, which is a measure of the total infestation of the crop, also was higher in the first three months for the lowest dosage.

The proportion of clean fruit and of clean plus lightly infested fruit in February (all dosages averaged) was definitely higher than for the other months; 60 per cent. of the crop from this time of treatment was marketable without scale removal treatment. For all other months the whole crop required scale removal before sale. It was quite noticeable that the greatest increase in scale population on fruit occurred before the fumigation given on 11th April, there being little difference in severity between April and August treated fruit.

For later tests it was planned to allow half of the total number of trees to produce a crop without further treatment. The other half was to receive two dilute (1-80) sprays in mid-December and late-January, the buffer columns Nos. 6, 10, and 14 in the plan, Fig. 2, to be fumigated in 1938 as in 1937. The trees untreated in 1938 represented all dosage rates and months of treatment. The reproduction of survivors for a whole season will accentuate any differences in control exercised by the various treatments in 1937. These can be measured at harvest.

GAS CONCENTRATION.

During the 45-minute period of fumigation of each tree, 24 samples of gas-air mixture were withdrawn from the tent and analysed by the Agricultural Research Chemist for percentage concentration of HCN gas. The positions of inlet tubes from which points gas was drawn from the tree were top, centre, bottom, and side. The side position was 2 inches to 5 inches from the tent and 5 feet from ground level. Top and bottom inlets were respectively 15 inches from the top of the tent and 15 inches from ground level at the base of the trunk. The HCN concentration-time curves for "positions" are shown in Graph 3.

Position.—Of the four positions the highest mean concentration was found at the centre of the tree. The curve for the top position shows little difference from that for the centre position. HCN gas is lighter than air and tends to rise. Also having much greater molecular activity than air, it readily penetrates the fabric of the sheets and escapes. Adsorption and absorption by tissues of leaf, wood, &c., and soil are further means of

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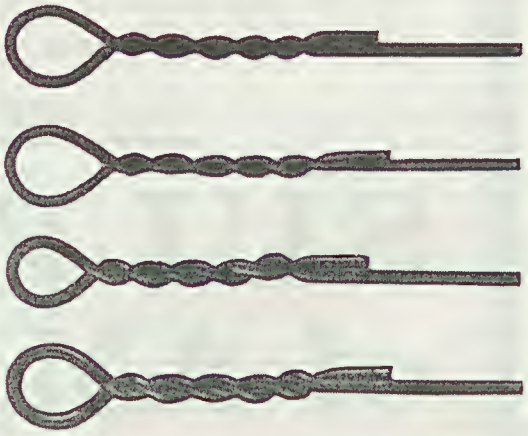

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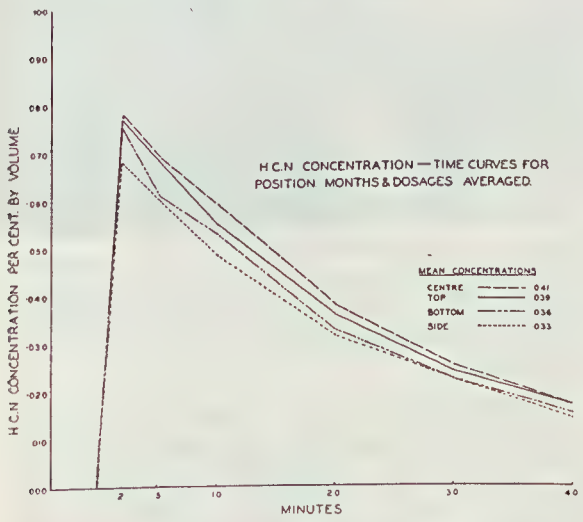
lowering the HCN concentration. The side position shows the lowest average mean concentration of gas.

The average mean concentrations for "position" in each month irrespective of dosages given are shown in Table 7. The difference of 0.008 per cent. mean concentration between bottom and side positions in March exceeds 0.004 per cent. as required for significance. Also in August mean concentration at both of these positions is significantly lower than that at top or centre.



Graph 3.—HCN concentration-time curves for position.

Dosage Rate.—The effect of dosage rate on HCN concentrations was definite. The increase of cyanide charge, however, did not produce a strictly equivalent increase in HCN gas concentration. This will be seen from Table 8, which shows the concentration produced by each dosage for each month.

TABLE 8.—SHOWING CONCENTRATION OF HCN GAS PRODUCED BY THREE DOSAGE RATES IN EACH MONTH.—DOSAGE RATE AND TIME OF FUMIGATION TESTS.

Month Fumigated.	Dosage Rate, Percentage of Standard.	Actual Dose to Tree in Briquettes.	Concentration Percentage of HCN by Volume.	Differences Exceeding these Values are Significant.
	%		%	
February ..	67	4	·027	·008
	100	6	·035	
	133	8	·044	
March ..	67	4	·027	·017
	117	7	·036	
	167	10	·058	
April ..	67	4	·030	·014
	117	7	·041	
	167	10	·059	
August ..	67	4	·022	·016
	117	7	·033	
	167	10	·044	

Increasing the dosage from 67 per cent. to 167 per cent. of the standard, actually a 250 per cent. increase for the highest rate above the lowest, produced in each of the three months, March, April, and August, only 100 per cent. increase of gas concentration. Also an advance from 67 per cent. to 117 per cent. of the standard, a 75 per cent. increase over the lowest dosage, increased the concentration of gas by only 33 per cent. for March and August, and by 50 per cent. in April.

The concentration of gas produced by the middle dosage rate, 117 per cent. of the standard, was not significantly greater than that from the lowest rate on any occasion. The concentration produced by the highest rate definitely exceeded that for the middle dosage

TABLE 7.—DOSAGE RATE AND TIME OF FUMIGATION TESTS, 1937.—HCN CONCENTRATIONS FOR POSITIONS IN TREE AND MONTH OF TREATMENT.

Three dosage rates averaged. (504 gas samples analysed in each month.)

Month Fumigated.	Concentration of HCN by Volume.					
	Top.	Centre.	Bottom.	Side.	Differences Exceeding these Values are Significant.	Average for Month.
	%	%	%	%	%	%
February	·035	·037	·036	·033	(Comparison Invalid)	·035
March	·046	·046	·038	·030	·004	·040
April	·043	·044	·041	·044	·006	·043
August	·035	·038	·029	·028	·005	·033

rate. Unfortunately, the kill of scale insects did not show any marked increase from the higher dosages used. This section of the work indicated that for trees similar to those tested the standard chart dose was satisfactory. Concentrations plotted against time of exposure of tree to the charge, for each dosage rate, months and positions being averaged, are shown in Graph 4.

Time of Season.—An average mean concentration value for each month of treatment is shown in Table 7. Although concentrations in August were reduced by high winds, weighting of the tents prevented wholesale escape of gas, and a good kill of scale was effected.

Concentration-time curves for each month, position and dosage rates averaged, are presented in Graph 5.

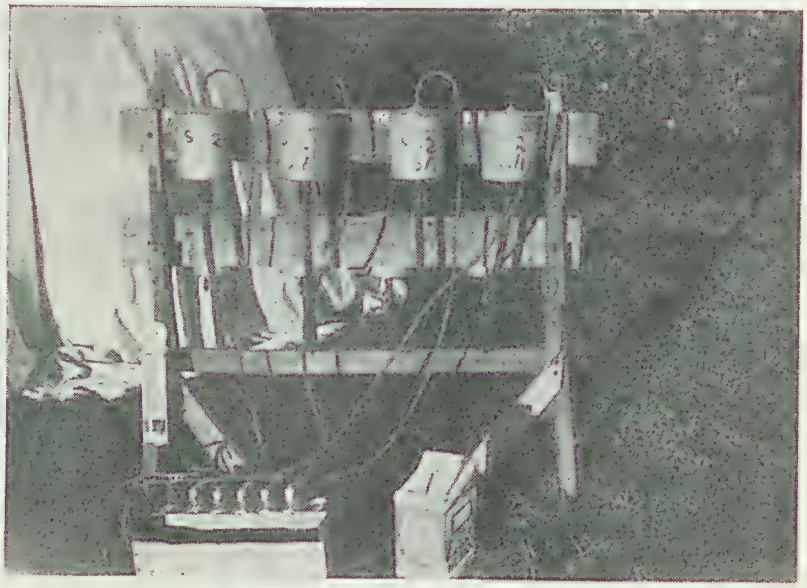


Fig. 3.—Apparatus for sampling gas-air mixture at four positions in the tree. Displacement of water from the upper to the lower cans draws 3000 c.c. of air through each trap of potassium bi-carbonate solution. The proportion of hydrocyanic acid gas is determined after titration with 1/20th normal iodine solution.

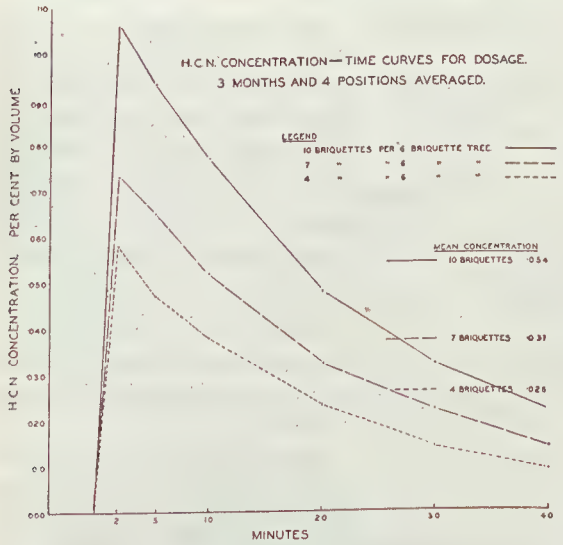
In order to present a complete series of data from the Dosage Rate and Time of Fumigation Tests, the salient points of preceding tables have been brought together in Table 9.

Meteorological Data.—Meteorological conditions during the nights on which the Dosage Rate and Time of Fumigation Tests were carried out are shown in Graph 6. No

TABLE 9.—RESULTS FROM DOSAGE RATE AND TIME OF FUMIGATION TESTS.—(RED CLIFFS (A. LUCAS), 1937.)

Month Fumigated.	Calcid Briquettes per Tree.	Concentration Percentage HCN by Volume.	Differences for Significance.	Percentage Kill.		Differences for Significance.	Degree of Fruit Infestation.			
				Leaves.	Fruit.		Percentage Clean.	Percentage Light.	Percentage Medium.	Percentage Heavy.
		%		%	%		%	%	%	%
February ..	4	·027	·008	98·5	70·1	F values, non-significant for fruit and leaves	16·5	70·9	11·8	0·8
	6	·035		99·3	82·7		27·8	66·1	5·5	0·6
	8	·044		98·8	82·7		28·9	64·5	5·8	0·8
March ..	4	·027	·017	98·1	98·4	F values, non-significant for fruit and leaves	0·0	53·0	45·8	1·2
	7	·036		99·1	99·1		0·0	50·6	48·5	0·9
	10	·058		99·2	99·2		0·0	68·4	30·6	0·4
April ..	4	·030	·016	96·5	98·0	F values, non-significant *for leaves*, 0·9 for fruit	0·0	1·1	14·9	84·0
	7	·041		97·8	98·1		0·0	3·2	18·5	78·3
	10	·059		98·3	99·4		0·0	1·1	19·2	79·7
August ..	4	·022	·016	98·1	98·0	F values, non-significant for fruit and leaves	0·0	0·9	7·6	91·5
	7	·033		99·9	99·5		0·0	0·5	9·7	89·8
	10	·044		99·9	99·7		0·0	1·5	7·1	92·6

Eight tree replicates per dosage per month.
Samples of 28 leaves and 5 fruits per tree taken for determination of kill.
Twenty-four gas samples per tree withdrawn for HCN concentration analysis.


H.C.N. CONCENTRATION—TIME CURVES FOR DOSAGE.
3 MONTHS AND 4 POSITIONS AVERAGED.
LEGEND
10 BRIQUETTES PER 6 BRIQUETTE TREE
7 " " 6 " "
4 " " 6 " "
MEAN CONCENTRATION
10 BRIQUETTES .054
7 BRIQUETTES .031
4 BRIQUETTES .026
H.C.N. CONCENTRATION PER CENT BY VOLUME
MINUTES

Graph 4.—HCN concentration-time curves for dosage.

extremes of temperature or humidity were experienced. It was recorded, however, that the soil around half of the trees treated in March was very wet from irrigation of the previous day. No injury resulted to these trees.

In August, fumigation was commenced at 4.15 p.m. and was interrupted by rain and high wind at 7.15 p.m. As soon as the actual rain ceased fumigation was proceeded with. Tents were sanded to prevent flapping and billowing as much as possible. No damage was caused to the trees, and the kill of red scale was up to the standard of the other months.

During the district survey mentioned earlier in this report, it was observed that high wind was the most important factor in preventing a satisfactory commercial kill of scale. Wind would reduce gas concentration more rapidly in hot dry atmosphere than with high humidities.

In June and August, trees not in these tests, but adjacent to them, were fumigated in bright sunlight between 11 a.m. and 2.30 p.m. and without any damage to the trees or their crop. These tests indicated that when conditions are otherwise favorable the factors of light intensity and fairly high soil moisture content are not detrimental to daylight fumigation in the months mentioned, at Mildura.

Sun temperatures and actinic activity increase rapidly after August however, and, when combined with dry soil and high air temperature or poor physiological health of the tree, are liable to cause damage.

Spray-Fumigation Trials.

The spray-fumigation trials were carried out in the Valencia section of Mr. L. Wilkinson's grove, adjacent to the Time of Spraying Trials. Thirty-six of the trees sprayed in February and in the same general condition as those used for the spraying trials were reserved for subsequent fumigation as indicated below:—

No. of Trees.	Interval Before Fumigation.	Date Fumigated.
9	12 days after spraying	18th February
9	30 days after spraying	9th March
9	60 days after spraying	6th April
9	6 months after spraying	11th August

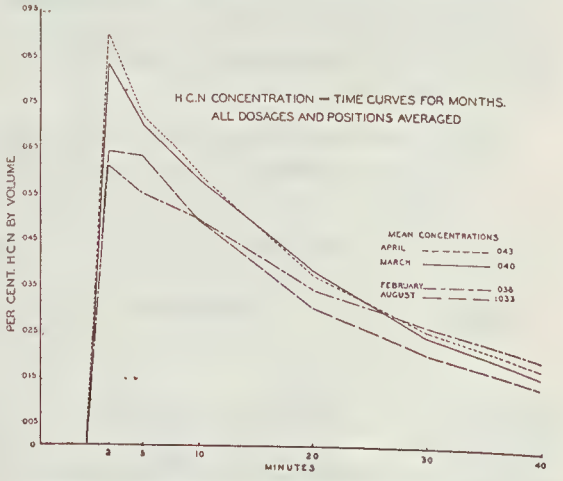
A standard 1-40 white oil spray was applied on 3rd to 6th February, and the cyanide briquette dose was increased to 117 per cent. of the standard chart dose. The results from these combination treatments in terms of scale kill are very encouraging and are shown in Table 10.

TABLE 10.—KILL ON LEAVES AND FRUIT IN SPRAY-FUMIGATION TESTS, 1937.—RED CLIFFS (L. WILKINSON, BLOCK 249A).

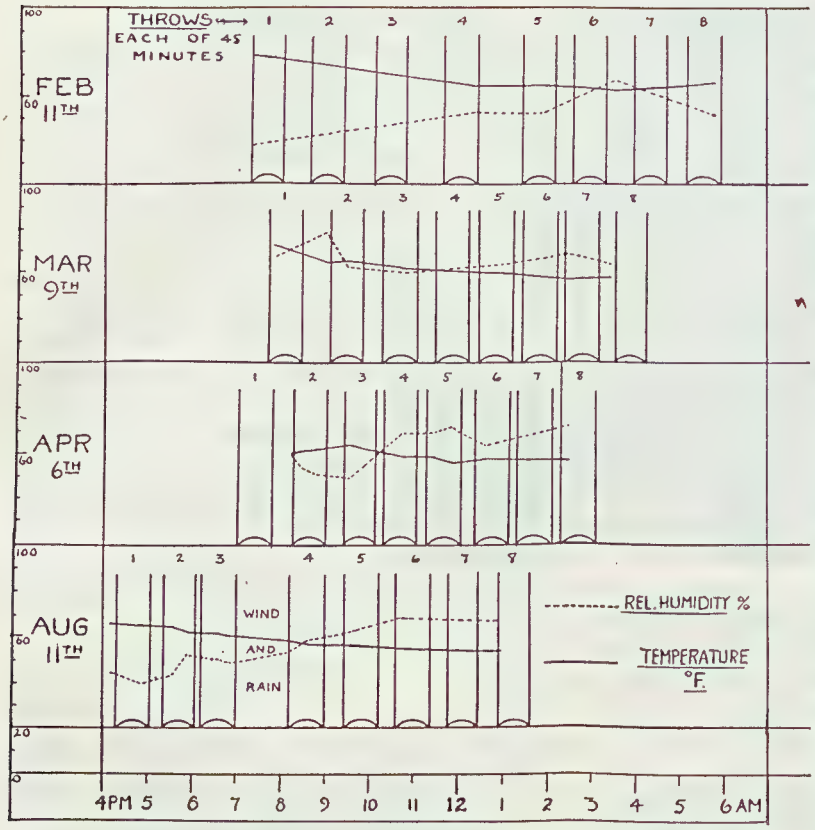
Kill.	Time Interval Between Spraying and Fumigation.			
	12 Days.	30 Days.	60 Days.	180 Days.
	Percentage Kill.	Percentage Kill.	Percentage Kill.	Percentage Kill.
	%	%	%	%
Leaves ..	99·8	99·9	100·0	99·9
Fruit ..	99·8	99·9	99·8	99·9
Average ..	99·8	99·9	99·9	99·9

Number of Scales examined, 32,248.

Thirty-six trees sprayed in February: nine of these were fumigated in February, nine in March, nine in April, and nine in August.



Graph 5.—HCN concentration-time curves for months.


THROWS → 1 2 3 4 5 6 7 8
EACH OF 45 MINUTES
FEB 11TH
MAR 9TH
APR 6TH
AUG 11TH
WIND AND RAIN
REL. HUMIDITY %
TEMPERATURE °F.
4PM 5 6 7 8 9 10 11 12 1 2 3 4 5 6AM

Graph 6.—Meteorological conditions during the nights on which the Dosage Rate and Time of Fumigation tests were carried out.

This infestation of fruit was due in part to reproduction from survivors of the February spray, but was due chiefly to infestation which had occurred before the spray was applied. The lower proportion of clean fruit from February-August spray fumigation is statistically significant. The effect of August treatment on clean fruit production was nil for 1937. Its effect on scale control, however, was evident in the 1938 crop.

Since, as yet, surviving scales have been found from every single or double treatment in 1937, the whole problem at present centres on how best to destroy these few survivors or their offspring. It has been estimated that a heavily-infested tree may carry 1,000,000 scales. If half of these are dead, a 99 per cent. kill of the remainder will leave 5,000 live scales on the tree. These may in a favorable season build up a population of scales equal to that present before treatment. If a second treatment be given four weeks after the first, a large number of the 5,000 would have died in the interval, and those scales born and establishing themselves in the same interval will be quite easily killed. Thus a second 99 per cent. kill might leave 25 live adults on the tree; a 99·9 per cent. kill would leave only two or three live adults. Actually, this would be the case on some trees, others would be quite scale free, and still others would carry possibly 50 live scales.

Actually, only five live insects were found in 15,532 scales examined on 216 leaves taken from 36 trees, while fourteen live insects were found on the fruit. Several trees showed, for the samples examined, 100 per cent. kill of insects. Notwithstanding these excellent kills, and the long period of weathering before harvest, a high percentage of clean fruit was not obtained. See Table 11.

TABLE 11.—SPRAY-FUMIGATION TESTS, 1937.—MORTALITIES PRODUCED AND INFESTED FRUIT OBTAINED WITH FOUR SPRAY-FUMIGATION SCHEDULES (L. WILKINSON, BLOCK 249A, RED CLIFFS).

Treatment.		Percentage Kill.		Proportion of Clean and Scale Infested Fruit.				
Sprayed.	Fumigated.	Leaves.	Fruit.	Clean.	Light.	Medium.	Heavy.	Clean, plus Light.
		%	%	%	%	%	%	%
February ..	10 days later (February) ..	99·8	99·8	22·3	76·9	0·8	0·0	99·1
February ..	30 days later (March) ..	99·9	99·9	25·3	73·9	0·8	0·0	99·1
February ..	60 days later (April) ..	100·0	99·9	29·6	67·1	3·2	0·1	96·7
February ..	180 days later (August) ..	99·9	99·9	8·3	79·3	11·2	1·2	85·6

These observations may be of value to growers in causing a realization of the necessity for giving several treatments at intervals of less than a year if near eradication is desired. They should serve also to reorientate ideas about reinfestation from neighbouring groves and alternate hosts. It readily will be seen that no probable transference of scale crawlers from grove to grove can be significant compared with the reproducing capabilities of even one healthy gravid female, and especially of 50 or 100 per tree. It follows that, instead of one fumigation every second year, two fumigations per year or the spray-fumigation combination would probably be more profitable where practicable.

Spraying and fumigating appear to have complementary values in effecting kill on both leaves and fruit. The outside leaves and fruit, close to the tent where concentrations have been shown to be often lowest, are most easily accessible to spraying methods. The back of the fruits and the centre wood of the tree, not so accessible to spray, are readily reached by the poison gas method.

After two or three years of double treatment in this experiment, it is hoped that no scale will remain on the trees. If this stage is reached it is then that means of reinfestation will assume great importance. The clean condition of the crop on these trees is a reason for optimism, but for practical results it may be necessary for comparatively isolated groups of growers to organize themselves for concerted action before the full benefits of the system could accrue to any of them.

Summary.

Investigation of the problem of red scale on citrus was commenced in April, 1935. Results of experiments and observations in field and insectary to October, 1936, were published in the August number of this *Journal* in 1937.

The present report covers results of control experiments completed by December, 1937, and of life history observations to June, 1938.

Seasonal activity of the insect has been studied at Red Cliffs since February, 1937. Mortality of scale, due to natural causes, on untreated trees rose sharply in April, 1937, and reached a maximum between 1st July and 30th September. Reproduction recommenced in October and considerably reduced the percentage mortality figure by the end of the month. Reproduction of the insect continued into the autumn much later in 1938 than in 1937, which is related to the very much higher average monthly temperatures from March to June than are usually experienced. Under such conditions, insects surviving spring and summer treatments may cause considerable infestation damage to Valencia fruit crops.

In the Time of Spraying Tests at Bamawm, the December–March spray schedule has given a significantly greater proportion of scale free fruit than has the December–January schedule. This is due to the high control value of the autumn spray showing up in the subsequent season's crop.

At Bamawm, the application of four dilute (1-80) white oil sprays in December, January, February, and March has given 87 per cent. of clean fruit from trees heavily infested before these treatments were given. The method is being further tested with a view to its adaptation to field practice.

At Red Cliffs, in Time of Spraying Tests, a second application between March and August inclusive, following a first spray of $2\frac{1}{2}$ per cent. white oil emulsion in February, has given satisfactory kill on leaves but not on fruit. The second season's crop is expected to indicate more clearly the value of these schedules in practical control.

In Dosage Rate and Time of Fumigation Tests at Red Cliffs, increasing the Standard Summer Chart Dosage Rate of Calcid briquettes by 17 per cent. and 67 per cent. has not caused a significantly greater kill of red scale insects than that produced by reducing the standard dosage 33 per cent. The test trees were of six-briquette size.

The highest dosage produced 100 per cent. higher concentration of hydrocyanic acid gas than the lowest dosage, and caused no damage to the trees or crop.

No variation from the standard Calcid chart doses is recommended.

Equally good kill of scale was obtained in February, March, April, and August.

Bright sunlight fumigation on 26th June and in August was successful in scale kill and safe to trees in preliminary trials.

Wind is considered to be the most important single factor operating against success with fumigation.

A satisfactory percentage of clean fruit cannot be expected from heavily-infested trees unless fumigated before 1st February in average years. After this period large numbers of scales have reached maturity and the big

majority do not fall off by harvest, especially with Navel fruit. For trees with a low scale population autumn fumigation has advantages over summer fumigation.

In combination Spray-Fumigation Tests at Red Cliffs, heavily-infested trees sprayed on 3rd February and fumigated in February, March, April, or May, showed an average of 99.9 per cent. kill of scale, irrespective of the interval between treatments. The same programme was repeated in 1938, and entire freedom from live scale was expected on some of these trees when harvesting the crop.

References.

1. Ward, K. M., and Johnston, C. J. R.—"Citrus Red Scale. Progress Report on Investigations, 1935-36." *Jour. of Agriculture*, August, 1937.
2. Knight, Hugh.—"Factors Affecting Efficiency in Fumigation with Hydrocyanic Acid." Hilgardia, Vol. 1, No. 3.

Butter Production and Export

The following table shows:—

(*a*) Factory production of butter and cheese in Victoria for the period July, 1938, to February, 1939, compared with the corresponding period of 1937-38.

(*b*) Quantities and percentages of various grades of bulk butter examined in Victoria for export during the period July, 1938, to March, 1939, in comparison with the corresponding period of 1937-38.

FACTORY PRODUCTION OF BUTTER AND CHEESE IN VICTORIA (QUANTITIES IN TONS).

Month.	Butter.		Cheese.	
	1938-39.	1937-38.	1938-39.	1937-38.
July to December	33,005	38,408	5,891	4,446
January	4,556	6,178	664	744
February	3,068 (†)	4,596	372 (†)	506
Totals—8 Months	40,629	49,182	6,927	5,696

† Subject to revision.

BULK BUTTER EXAMINED IN VICTORIA FOR EXPORT (QUANTITIES IN TONS).

Month.	1938-39. How Graded—				Total.	Month.	1937-38. How Graded—				Total
	Ch.	1st.	2nd.	Pty.			Ch.	1st.	2nd.	Pty.	
July to February	15,519	5,252	1,545	134	22,450	July to February	20,273	8,469	1,771	89	30,602
March ..	362	520	260	21	1,163	March ..	1,439	309	175	6	1,929
Totals—9 Months ..	15,881	5,772	1,805	155	23,613	Totals—9 Months..	21,712	8,778	1,946	95	32,531
Percentages ..	67·3	24·4	7·6	0·7	..	Percentages ..	66·7	27·0	6·0	0·3	..

By A. W. Jessep, M.Agr.Sc., B.Sc., Dip. Ed., Principal, School of Horticulture, Burnley.

Garden Notes.

WEATHER conditions during the past two months have effected a complete change in the appearance of the gardens. Parched lawns have gone into active growth again, and now is the time to examine them carefully, getting rid of any prominent weeds. If the lawn has not recovered satisfactorily, it may be necessary to pick it over and resow any sparse patches.

Seeds of antirrhinum, calendula, carnation, dianthus, wallflower, and gaillardia may be sown. This is a good month to divide up and replant canna, agapanthus, alstroemeria, hyacinth, watsonia, and lily of the valley.

Conditions are suitable for planting out hedges. Although a hedge is not a necessity in all homes, it is essential if provision for shelter from strong winds and dusty conditions is required. A hedge also provides the privacy in a garden which many people find desirable.

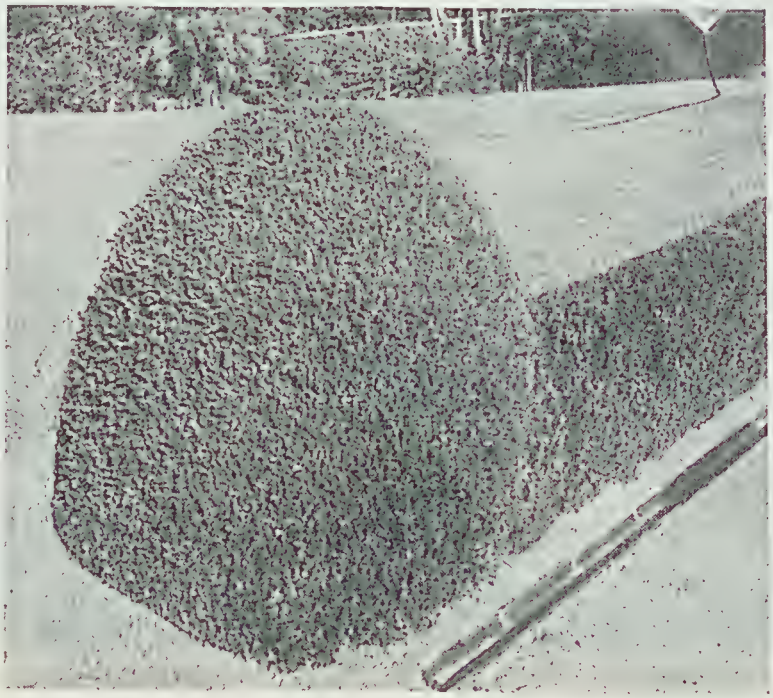
A hedge should be of bushy habit, be able to withstand constant cutting back, not rob the soil unduly of plant food, and be pleasing to the eye by reason of attractive foliage, flowers, or berries. Generally speaking, hedges should not be cut on top until they have reached about one foot below the required height. From then onwards, they should be cut as often as is necessary to keep them neat and tidy in appearance. There are hedges to meet every requirement, including dwarf, tall, evergreen, deciduous, variegated, berry and floriferous types.

The *Buxus* or box is one of the best smaller types. This is a slow-growing evergreen which may easily be kept down to within a foot or so of the ground. It is particularly useful to define an area, is easily grown and requires very little attention. Various coloured foliage types of *Buxus* are now on the market. The plants should be placed about 9 inches apart to form a good compact hedge. The golden privet is probably the most popular medium sized hedge plant in cultivation to-day. The evergreen variety is used to a small extent only. Under most conditions the golden type is hardy and may be easily trained, the foliage being very attractive. Although it is a rather fast grower, it is an easy plant to cut and keep tidy. If a

thick hedge is required, plant in a double row, leaving 18 inches between the plants in the row and stagger them till they are about 10 inches apart.

Lonicera nitida is very useful as a low hedge of about 2 feet in height. It is a very bushy, dwarf variety of honeysuckle, bearing small foliage and fragrant, creamy-white flowers in summer. It is a good grower, very hardy, and is easy to cut. Place the plants about 18 inches apart.

Where a tall hedge is required, the cypress seems to head the list as far as popularity is concerned. It is easily grown, develops quickly and is very hardy. When purchasing plants for a hedge, be sure to obtain plants grown from cuttings, as the seedling cypress will not withstand constant clipping. The cypress most used for this purpose is known as *Cupressus Lambertiana horizontalis*, but several other varieties make quite good hedges when planted 3 or 4 feet apart.



A dwarf box hedge—one of the best smaller types of evergreen hedges.

Pittosporum and evergreen hawthorn were very popular some years ago, but are not recommended nowadays, because after a few years, they become too thin and scraggy at the base, as compared with other types. In hot, dry districts, the salt bush (*Rhagodia hastata*) makes an excellent hedge, but as it has a disagreeable odour after rain has fallen, it is not recommended, except for situations in which better hedge plants will not succeed.

Under moist conditions, the lilly pilly (*Eugenia*) makes a nice hedge. This plant is a native of Australia and produces attractive berries and young foliage. Other native plants that may be used for hedges include the tea tree, acacia, boobyalla and grevillea.

The following plants sometimes are used for hedges also:—bougainvillea, tecoma, lantana, plumbago, and roses, especially climbers and the polyantha types.

Vegetables.

Pumpkins, melons and cucumbers may now be removed from the vegetable garden, and the area given a good digging over in preparation for further plantings of broad bean, cabbage, cauliflower, onion, shallot and garlic. An early sowing of culinary peas might also be made, of which William Hirst is a good early variety.

Where plants are growing, keep the soil stirred to prevent it from caking during the winter months. Divide up and replant any culinary herbs or rhubarb crowns that require such treatment. The rhubarb bed should be given a good dressing of farmyard manure, or if this is not available, some market garden manure, at the rate of 2 oz. per plant.

Garlic is very easy to grow, and since the bulb is so useful for flavouring purposes, a small area should be sown in every kitchen garden. Garlic does not produce seed, but is grown from its cloves or portions of the compound bulb. The group of bulbs is broken up, the inner ones being used for flavouring and the small outer ones for planting during April to June. They should be planted in rows about 12 inches apart and 4 to 6 inches between the cloves. Leave the cloves more or less uncovered, and in the early spring, level the soil over them. The bulbs will be ready for lifting when the leaves turn yellow, which is usually in January. Although garlic will grow in most soils, good drainage is necessary; otherwise the bulb may rot. Garlic should be stored in a dry place until required for use.

Orchard Notes

By J. L. Provan, B.Agr.Sc., Senior Horticultural Instructor.

DURING May there is less activity amongst apple and pear exporters. Democrat, Rome Beauty and Yates still remain to be harvested in some districts.

Some growers are concerned by the prevalence of a stem-end blemish, particularly in the late varieties of apples. This blemish takes the form of a breaking away of the skin from around the point of insertion of the stem. The skin shrinks and a cavity is formed beneath it. Later, a new skin develops and protects the blemished surface. In some cases, fungal rots become prevalent in this area. If affected fruit be allowed to remain on the tree, the blemish will be completely healed and the fruit would be quite safe for export purposes. If the fruit is picked before this healing has taken place, drying, and not healing, of the tissues occurs and serious stem-end rotting may intervene. Export fruit inspectors have been instructed not to pass fruit on which these blemishes are not perfectly healed.

Early navel oranges and grapefruit will be arriving on the market in larger quantities, and growers are reminded that the standards of maturity for oranges, and the juice content, should be observed. There is a tendency amongst grapefruit growers to harvest a considerable quantity of grapefruit during May and early June. Unfortunately, the Marsh Seedless variety has not attained its full flavour and quality at this time of the year and, wherever possible, growers should endeavour to postpone harvesting this variety until July, August and even later where possible. A practice which is being observed by a number of growers is to harvest only that fruit which is liable to fall, retaining the fruit on the inner portion of the tree for later markets.

Intending citrus planters will have to consider the choice of rootstock they are going to plant. As far as scion variety is concerned, the choice is narrowed down to practically three varieties, i.e., the Washington Navel and Valencia Late oranges and the Marsh Seedless grapefruit. Some lemons are being planted, and only two varieties are commercially grown, viz., the Lisbon and the Eureka. Intending planters should endeavour to obtain their young trees worked on Sweet orange or Sour orange rootstock.

Stem of a young Valencia Late orange tree worked on Sour orange root-stock—two years old.

Recent trials at Irymple have shown that, on suitable soils, the Sweet orange rootstock produces a slightly better tree than even the vigorous Rough lemon (Citronelle) rootstock. During the first and second years after planting, the tree on the Rough lemon rootstock has a slight advantage but, later, the tree on Sweet orange rootstock overtakes that on the Rough lemon. For heavier types of soil, and particularly where there is a slight salinity, the Sour orange rootstock should be preferred. When planting young bare-rooted citrus trees, remove all the foliage with the exception of an odd leaf or two, and prune back the head to short main arms, suitably spaced. Remove injured roots, and protect the trunk, from the soil level to the head of the tree, by several thicknesses of paper tied top and bottom.

The good autumn rains have stimulated root growth of both deciduous and evergreen trees.

This root activity augurs well for the approaching season and, providing reasonably normal weather is experienced at blossoming time in the spring, good yields can be expected. Attention to drainage during the winter is particularly important if these young roots are to survive and function actively again in the early spring. It must be borne in mind that, although the tree is apparently dormant, the root systems continue to function by absorbing moisture and they require a certain amount of aeration during the winter. Roots will be quickly drowned if the soil remains water-logged during the winter.

Defoliation of deciduous trees commences this month and growers, who usually experience difficulty in controlling shot hole of the apricot, are advised to apply a 6 : 4 : 40 Bordeaux mixture before the end of May. In some of the drier districts, this Bordeaux mixture application is frequently delayed until July, when it is more convenient for orchardists to fit it in their spray programme. This delay has not apparently affected the efficiency of the spray in these districts, probably because shot hole is never so serious as in moister climates.

The passion fruit harvest continues during May and growers should adopt all measures to prevent shrivelling of the fruit during harvesting operations. Pick and handle the fruit carefully and break the stalk just above the dead flower. Do not place picked fruit in windy or draughty places. Dipping in a wax solution will materially assist this fruit in maintaining its smooth character.

Spaying of Animals

(*continued from page 232*)

is available an ordinary bail is quite satisfactory and is all that is required for dairy cows.

The equipment already mentioned is all that is necessary except for the addition of a special spaying knife having a concealed blade, which is not opened till in the vagina just prior to the incision being made. (The suture material, such as needles, silk, methylated spirit, &c., will not be required.)

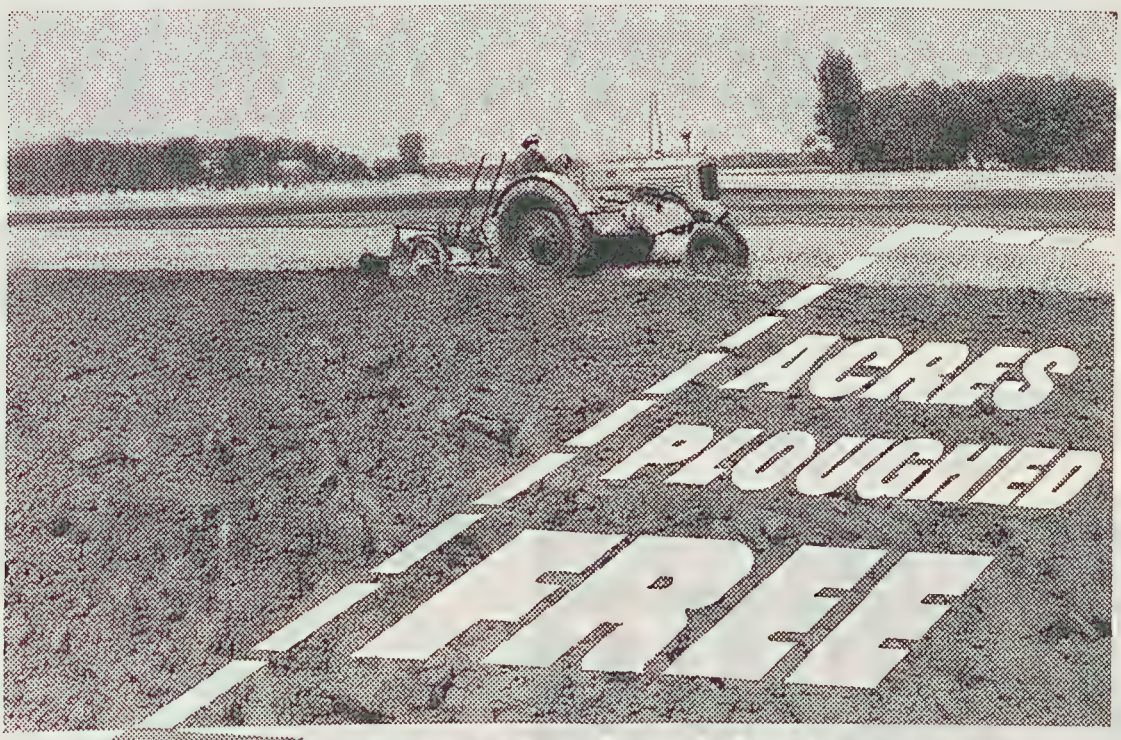
Cows, especially dairy cows, should be first examined to ascertain if there is any abnormality such as a discharge from the uterus or from the vulva, or any signs of vaginitis. If all is apparently normal the vagina should not be washed out, but the anus, vulva and buttocks should be well cleansed with a 5 per cent. antiseptic solution as already recommended for the disinfection of instruments.

The hands having been thoroughly cleansed the operator should insert a hand into the vagina with the special knife concealed in the palm. Two or three inches above the mouth of the womb an incision about an inch long should be made through the vaginal wall and also through the peritoneum, as otherwise the ovaries cannot be reached. After the knife has been removed from the vagina the fingers should be inserted through the wound opening and an ovary felt for ; this is generally withdrawn through the opening, and removed, the emasculator having been inserted by the other hand. The ovary is left on the floor of the vagina while the other ovary is sought for and removed in the same way. The emasculator, both ovaries and the hand are then withdrawn and the operation is complete. Normally, no further dressing or attention is necessary except that the animal should be kept as quiet as possible for a few days.

With keen attention to detail, such as cleanliness and the avoidance of any attempt at undue speed in operating, losses as a result of spaying can be reduced to a minimum.

General Instructions.

At the time of the operation the animal's bowels should be as empty as possible.
Spay only when the animals are cool.
Have yards and surroundings free from dust.
Sterilize instruments thoroughly.
Keep hands and arms clean and wear clean overalls.
Keep spayed cows at rest for ten days after operation.



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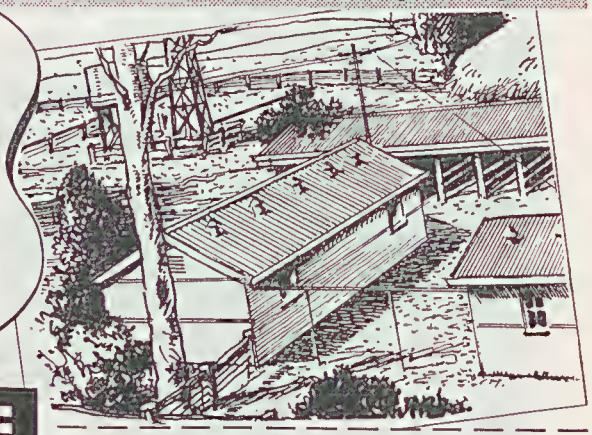

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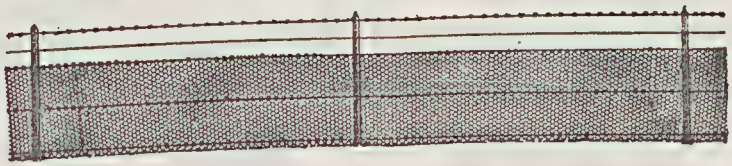

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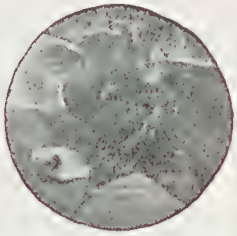

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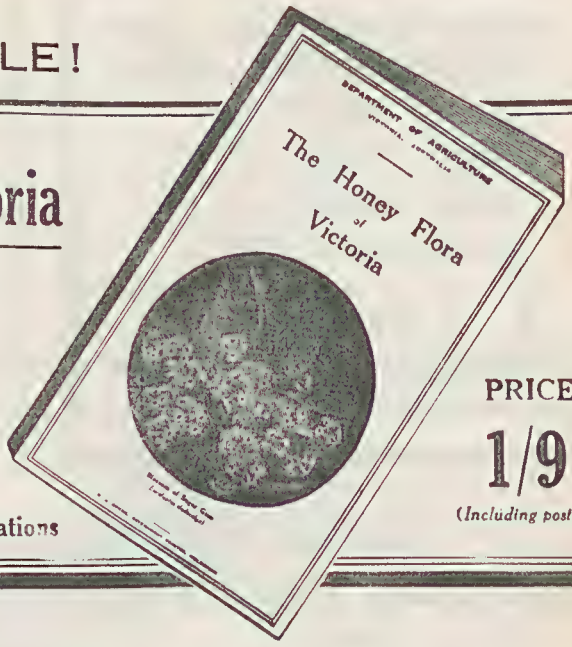

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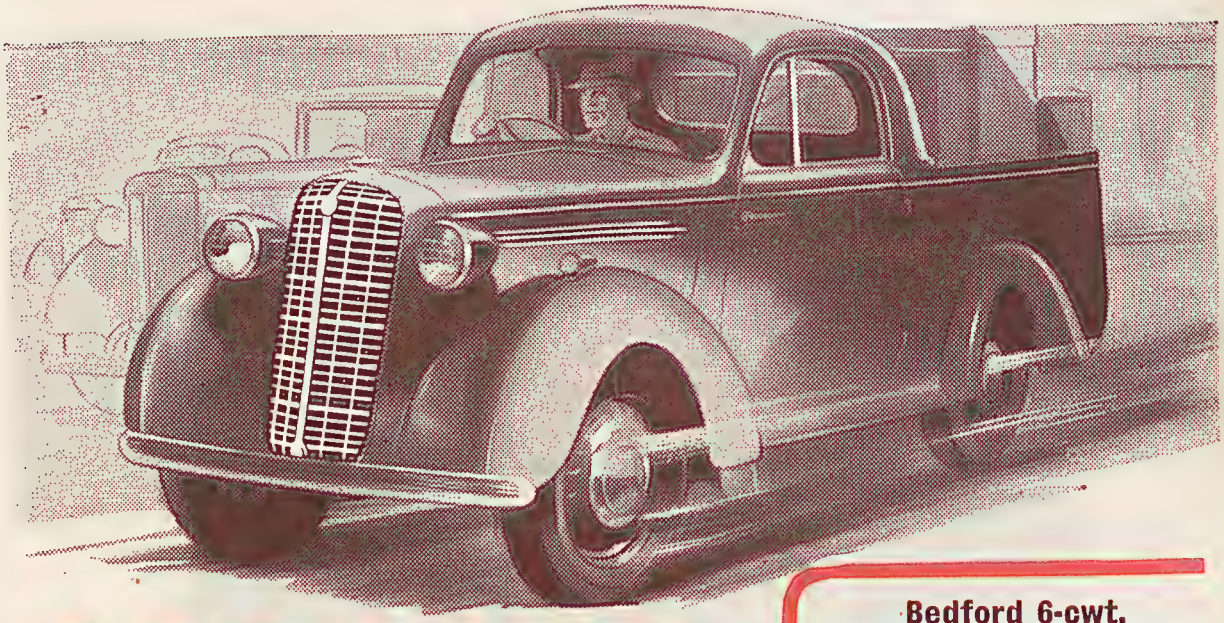

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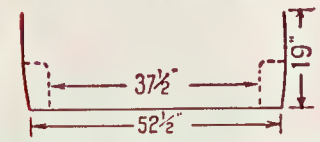

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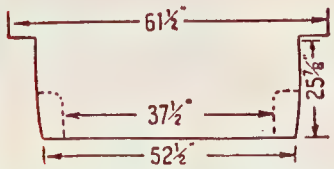

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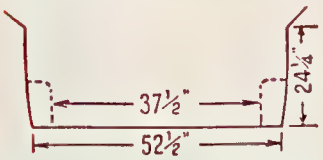

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527	Abbotsford Cavalier	5 D.	H. E. Ward, Ballarat
1056	Abbotsford Supreme	A. D.	U. P. Broome, Tocumwal
839	Abron Hill Design	A. D.	O. R. Pietsch, Areegra
472	Abron Hill Surprise	4 D.	E. V. Rohde, Gerang Gerung
922	Acheron Lad ..	4 T.	L. R. O. Hodge, Gelantipy
973	Acton's Choice ..	A. D.	Mrs. F. A. Foster, Keysborough
1439	Addale	5 D.	J. Sanders, Hopetoun
847	Admiral Ribbon Wood	A. L.	E. Jones, Manangatang
924	Afew	A. L.	R. E. Larkens, Warrak
594	Ahitana Gift ..	A. D.	J. Leydon, Kilmore
471	Ailsa Craig Bold..	4 D.	P. E. Spicer, Dimboola
139	Ailsa Craig Laddie	6 D.	C. Carter, Karrawinna
711	Ailsa Craig Wright	A. D.	A. W. Watters, Wunghnu
773	Akanree ..	A. T.	W. Elphinstone, Melbourne
325	Alambra ..	A. P.	J. H. Grimmett, Laanecoorie
1385	Alick Again ..	A. D.	J. McKinnon, Yielima
190	Ali Pasha ..	6 T.	Executors of the Estate of C. Campbell, Swan Hill
326	Alladan's Pride ..	6 P.	H. Baldwin, Yea
1296	Allan Cleve ..	A. L.	R. C. Gordon, Drumanure
65	Allandale ..	A. D.	H. F. Altmann, Jeparit
1416	Allanlea ..	6 D.	W. T. Rodda, Tarranyurk
220	All Craig ..	6 D.	S. W. Crabbe, Birregurra
64	Allendale ..	A. D.	A. J. Dorahy, Bolinda
595	Allendale Sensation	A. D.	J. Cawrse and J. Hall, Red Bank, S.A.
630	Alberton Bold Ben	3 D.	V. Coats, Mt. Jeffcott
555	Allowa Duke ..	6 D.	S. L. Mitchell, Woomelang
1202	Allowa Wyundal ..	6 D.	W. D. Walker, Almurta
87	All's Well ..	A. D.	G. R. Starritt, North-West Mooroopna
765	Almont King ..	5 L.	A. D. Murdock, Quambatook
1055	Altair Duke ..	6 D.	T. Kelly, Minyip
564	Alto Minstrel ..	A. L.	E. G. Jones, Underbool
1203	Alverton Baron Stephen	A. D.	M. B. Delahunty, Murtoa
140	Alverton Satisfaction	6 D.	E. F. Hancock, Warracknabeal
32	Alverton Style ..	3 D.	C. S. Rodda, Warracknabeal
4	Amby Park Impression	5 D.	K. Cameron, Warracknabeal
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938	Anchordale ..	5 P.	A. T. McDonald, Mead
1293	Appian Way ..	4 L.	J. McKay, Elsternwick
327	Aran Isle	A. L.	H. M. Brown, Leitchville
1133	Archaics Heir ..	A. D.	R. T. Hill, Hanson South
244	Argyle Chief ..	6 D.	N. Cameron, Somerset, Tasmania
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328	Argyle Scottie ..	6 D.	C. J. Symes, Walpeup
329	Arthur's Pride ..	A. D.	Gowanford Stallion Club, Gowanford
118	Assure Derby ..	A. L.	Jas. Coffey, Murtoa
678	Aussie Diblitz of Fenwick	A. P.	Mrs. A. C. G. Maclellan, Malvern
391	Autogiro ..	5 T.	J. J. Hardy, Casterton
1000	Avalier Flash Footstep	4 D.	Jas Phillips, Geelong
803	Avalon Park Premier	6 D.	G. A. Konig, Jung North
867	Aviator ..	A. D.	Jas. Currie, Balmattum
1043	Avondale ..	3 D.	John Foley, Llowalong
679	Avondel Drumbaron	A. D.	L. Cullinan, Longlea
602	Avonglen Bravo ..	4 D.	G. R. Hildebrand, Leitchville
245	Avon Hero ..	A. D.	M. and J. Foley, Llowalong
558	Avonlea Bold Master	5 D.	Mrs. F. J. Pilgrim, Gre Gre Village
1232	Balblair Majestic..	3 D.	Alex Murray, Coldstream
1026	Balkan King ..	A. T.	H. N. Walpole, Whorouly South
1200	Ballygolly Again..	A. P.	W. Cox, Moolort
330	Balmedie Bold ..	A. D.	J. Henderson, Baulkamaugh North
563	Balmedie Chief ..	A. D.	Wm. Bath, Inverleigh
388	Balmedie Sunray	4 D.	O. Bassett, Sandmount
1214	Balmerino ..	A. T.	W. D. Wright, Broadford
227	Bamawn ..	A. T.	Melb. and Metro. Bd. of Wks., Werribee
802	Banaghar ..	A. T.	Mrs. Norah Wood, Tallangatta
133	Bandolier ..	5 D.	R. and J. Galloway, Majorca
518	Bangaroo Dignity	5 D.	A. W. Menzel, Nhill
1250	Banjo Boy ..	4 P.	Mrs. H. Dwyer, Blackburn
841	Bannockburn Panacea	A. D.	P. B. Malone, Leichardt
1394	Bannock Dale ..	A. D.	E. A. McArthur, Sea Lake
1121	Baraclan ..	A. T.	T. B. Waters, Corryong
1163	Barkoola Prince ..	A. P.	A. G. Stewart, Frankston
543	Barney Ideal ..	A. D.	D. A. McMillan, Pier Millan
1112	Baron	A. D.	Jas. Carroll, Mudgegonga
1111	Baron Again ..	6 D.	W. J. Wohlers, Pinnaroo, S.A.
1466	Baron Agitation ..	A. D.	Dukelow Bros., Mt. Cotterell
240	Baron Banjo ..	A. D.	P. K. Tomkins, Wando Vale
1005	Baron Baritone ..	A. D.	Uebergang, H., Croxton East
1019	Baron Crawford ..	A. D.	L. J. King, Quambatook
953	Baron Crombie ..	A. D.	T. Genders, Lockwood
801	Baron Dale ..	A. D.	V. J. Lanfianchi, Cowangie
513	Baron Deighton ..	5 D.	A. P. Swann, Werrimull
331	Baron Douglas ..	A. D.	F. W. Bowyer, Woodend North
544	Baron Duke ..	A. D.	W. H. Rice, Cocamba
246	Baron Estill ..	A. L.	Jas. Medlyn, St. Arnaud
976	Baron Jack ..	A. D.	Mrs. E. E. Pickering, Hopetoun
1379	Baron King ..	A. D.	W. Watts, Kamarooka
955	Baron Loch ..	A. D.	W. Kempton and Sons, Camperdown
1479	Baron Mac ..	A. D.	M. J. Francis, Fosterville
593	Baron Mountain Monarch	A. D.	C. Williamson, Buninyong
1440	Baron Orchy ..	6 D.	A. C. Graham, Stawell
1086	Baron Pettie ..	A. D.	J. Hassell, Heathcote
545	Baron Premier ..	A. D.	F. A. Cameron, Warracknabeal
247	Baron President ..	6 D.	T. Wallbridge Pty. Ltd., Melbourne
998	Baron Pride ..	A. D.	E. C. Gibbs, Kew
141	Baron Pryde ..	A. D.	T. A. Sanderson, Pinnaroo
478	Baron Royal ..	4 D.	W. W. Eldridge, Ouyen
805	Baron Salisbury ..	A. D.	Dyson Bros., Broadwater
291	Baron's Best ..	A. D.	W. R. Black, Kaniva
546	Baron's Fashion ..	A. D.	F. Down, Speed
298	Baron Silk ..	A. D.	L. C. Leseburg, Rutherglen
825	Baron's Patch ..	6 D.	Mrs. E. G. Romeo, Patchewollock
199	Baron Sportsman..	A. D.	Bailey and McLelland, Woomelang
248	Baron's Pride ..	6 D.	R. E. Nichols, Merbein
1126	Baron's Star ..	A. D.	J. A. Cullen, Mortlake
1600	Baron Style ..	A. D.	Exors. of the Estate of W. Gould, Kinnabulla
1403	Baron Victor ..	A. D.	W. P. Leach, Lake Bolac
332	Baron Wallace ..	A. D.	W. G. Thompson, Carron
85	Baron Weerite ..	A. D.	J. Manifold, Weerite
547	Baron Willie ..	A. D.	L. A. Morris, Numurkah
1480	Baroona Boomerang	A. D.	A. G. Turnbull, Tyrendarra
933	Baroona Flash Slade	5 D.	E. J. Black, Dunrobin

* *Note.*—Age in years. A., aged; D., draught; L., light; P., pony; T., thoroughbred.

STALLION REGISTER 1938–39—*continued.*

Cert. No.	Name.	Age* and Class.	Owner and Address.
463	Baroona Slade Light	5 D.	L. Price, Condah
42	Battery Head ..	A. T.	O. G. Ridge, Toowoomba, Queensland
613	Battlement (Imp.)	5 D.	R. V. Quick, Angip
333	Battyll	A. T.	Muller Bros., Nagambie
334	Beam's Best ..	6 D.	F. P. Ellard, Rupanyup
1081	Belford Knight ..	A. D.	R. Lemon, Korong Vale
850	Belgian's Boy ..	A. D.	H. G. Kruger, Croxton East
1454	Belgian's Choice ..	A. D.	F. R. Widdicombe, Casterton
808	Bellevale Norval..	A. D.	Morey Bros., Yabba North
1249	Bell Metal of Mundurno	5 P.	W. E. Clinton, Heidelberg
1311	Belmont Again ..	A. D.	O. Jaeschke, Angip
1413	Belverae Masterpiece	A. D.	H. Sundermann, Dawson
289	Benambra ..	6 L.	J. Paton, Tallangatta
1046	Ben Bowyang ..	4 D.	J. Wilson, Nar-nar-goon
335	Beneveto ..	6 D.	E. F. Jensz, Katyil
165	Benomarie Baron Dale	A. D.	W. McWilliams, Bendigo
169	Benowrie Chief ..	4 D.	E. W. Tye, Cynthia, Q'land
336	Bentrovata ..	A. D.	W. Barber, jun., Nhill
701	Berkeley ..	3 P.	R. W. Crozier, South Morang
548	Berkeley Brat ..	6 L.	K. Cameron, Warracknabeal
1248	Berkeley Hafron ..	3 P.	Mrs. H. Dwyer, Blackburn
1247	Berkeley Sensation	4 P.	Mrs. H. Dwyer, Blackburn
1110	Berkeley's Top ..	A. P.	W. Weigall, Couangalt
696	Berrileigh Prince	4 D.	Pearce Bros., Pier Millan
824	Berwick Victor ..	A. D.	H. Doherty, Yundool
823	Bill Marie ..	A. T.	D. Murphy, Rochester
166	Billy	6 L.	J. E. Taylor, South Melbourne
654	Binosterly ..	5 L.	W. Marke, Girgarre East
1180	Blackadder ..	A. T.	J. G. Adams, Mansfield
1246	Black Bunny ..	A. P.	F. R. Renwick, Mentone
337	Black Dale ..	A. D.	W. H. Waldron, Carranballac
1109	Black Jack ..	A. P.	J. Bell, Merino
1108	Black Prince ..	A. P.	H. Scarce, Roslynmead
966	Black Prince ..	4 D.	F. Talarico, Iona
1236	Black Redmond ..	3 L.	T. Johnson, Elsternwick
957	Black Shadow ..	6 D.	W. R. and M. Gadd, Wodonga
1382	Black Shepherd ..	A. D.	Simpson Bros., Yambrina
1080	Blackthorn of Penniwells	A. P.	Miss M. Small, Hawthorn
800	Black Vin ..	4 L.	M. Davis, Ultima
1193	Black Wasp ..	A. P.	E. Wheelahan, Ballan
669	Blend Royal ..	A. D.	G. S. Wall, Earlston
1170	Blair Essan ..	3 P.	G. R. Nicholas, South Melbourne
98	Blighty Bombardier	6 D.	B. Lawrence, Lockington
385	Blighty Captain ..	5 D.	A. T. Williams, Numurkah
1045	Blond Rajah ..	4 L.	H. Sundermann, Dawson
1363	Bloomfield Craig	A. D.	J. Waite, Nathalia
724	Bloomfield Garry..	5 D.	G. Burrows, Tasmania
1027	Bloomfield Print..	A. D.	W. E. Hopgood, Beaconsfield
249	Blue Danube ..	6 P.	T. Slattery, Yambuk
806	Blue Derby ..	6 L.	N. Sutton, Yando
497	Blue Ideal ..	5 P.	C. F. Crabbe, Gerangamete
1281	Blue Monk ..	A. L.	J. W. Bartlett, Stratford
108	Blue Peter ..	A. D.	R. J. Hine, Rowsley
383	Blue Speck ..	3 P.	S. Baxter, Picola
458	Bobbie Bells ..	5 L.	J. Jardine, Rathscar
1447	Bobs	A. D.	A. O. Allen, Murrayville
1127	Bob Simmer ..	A. P.	R. J. Darcy, Mooroopna
846	Bold Acton ..	A. D.	J. Lowe, Gymbowen
975	Bold Arthur ..	A. D.	G. L. Curtis, Wangaratta
44	Bold Barold ..	6 D.	Jas. Axford, Terang
142	Bold Bill ..	A. P.	J. R. Morrison, Terang
1463	Bold Brae ..	A. D.	L. P. and F. Coffey, Birchip
86	Bold Briton ..	A. D.	H. Kinnersly, Mininera
1094	Bold Douglas ..	A. D.	Robt. Stewart, Winton
1445	Bold Drumcross ..	A. D.	C. Simon, Leongatha
1434	Bold Favorite ..	A. D.	S. White, Deroy
1122	Bold Jack ..	A. D.	M. T. Hogan, Jeffcott South
119	Bold Jack ..	A. D.	Jas. Mann, Ceres
1004	Bold King ..	A. D.	D. Rumbold, Baringhup West
1233	Bold Lad ..	4 P.	W. Woodhall, Longwarry
425	Bold Pat ..	A. D.	J. H. Lockitt, Linga
1145	Bold Print ..	A. D.	Geo. Small, Birchip
737	Bold Scott ..	A. D.	O. R. Aitken, Mitre
250	Bold Silk ..	A. D.	A. P. Wade, Glen Alvie
1289	Bold Squire ..	A. D.	J. Wade, Drouin
1420	Bold Success ..	A. D.	J. Rumbold, Laanecoorie
1107	Bold Victor ..	A. D.	J. W. Skehan, Oxley
549	Bold Voyage ..	A. L.	S. P. Foster, jun., Richmond
907	Bon Accord ..	A. D.	L. R. Brindley, Avondale
455	Bon Ayr Gloucester	4 D.	Annie H. Price, Wallacedale North
615	Bon Duror ..	5 D.	A. E. Johnston, Mologa
1433	Bonnie Brae Flash Norman	A. D.	T. G. Deller, Willenabrina North
550	Bonnie Caesar ..	A. L.	T. A. Smith, Horsham
45	Bonnie Clyde ..	6 D.	H. E. Taylor, Chinkapook
200	Bonnie Lad ..	A. D.	J. H. Haustorfer, Natimuk
681	Bonnie Prince ..	A. D.	M. P. Cleary, Nooramunga
1106	Bonnie Star ..	A. D.	I. S. Gillespie, Rockbank
167	Bonnie's Pride ..	A. D.	F. Collins, Tempy
251	Bonnie View Dignity	A. D.	Judd Bros., Yanac
1329	Bonny Jim ..	A. P.	W. J. C. Weigall, Seymour
143	Bonny View Hero	A. D.	C. E. Roulston, Coleraine
685	Bonshaw ..	6 T.	W. J. Ibbs, Gannawarra
535	Boundary Park Rover	3 D.	G. Holloway, Tabilk
1008	Bowview Knight..	A. D.	A. Olson, Nowie North
492	Box Vale Baron Douglas	4 D.	Towk Bros., Walpeup
1213	Box Vale Britain	A. D.	E. J. Semmler, Hopetoun
452	Box Vale Flash Carlisle	5 D.	Colbert Bros., Broughton
493	Box Vale Flash Design	5 D.	Towk Bros., Walpeup
144	Brackenhurst Pride	A. D.	A. Gibbard, Vectis East
1269	Braebank Bon Accord	4 D.	W. Wilkinson, Yarrawonga
338	Braw Lad ..	A. T.	H. C. Robertson, Tintaldra
972	Braw Laddie ..	A. D.	W. J. Tyack, Yalea
238	Break Up ..	A. T.	G. R. Nicholas, South Melbourne
253	Brigham Boy ..	A. P.	R. Beasley, Boinka
339	Brigham Boy ..	A. P.	J. W. Ewing, Penshurst
386	Brigham's Sambo	5 P.	R. H. Grimmer, Wickliffe
40	Brighton Renown	4 D.	O. J. Pohlmer, Woorak
254	Bright Star ..	A. D.	J. Walker, Lara
1462	Brilliant Dawn ..	A. D.	J. W. Davis, Tarra Valley
170	Brilliant Jim ..	A. P.	W. Cozens, Boorool
898	Brilliant Knight ..	5 D.	L. Halloran, Kyneton
509	Brilliant Lulu ..	5 L.	F. A. Burkinshaw, Wareek
1412	Brilliant Morn ..	A. D.	H. Sundermann, Dawson
1333	Briton's Bold ..	A. D.	G. W. Young, Lang Lang
1387	Britannia ..	A. D.	C. S. Rodda, Warracknabeal
1301	Broadview Premier	A. D.	J. P. and C. Della, Lake Hindmarsh
1218	Broadway Swell ..	6 T.	J. Hunt, Seymour
499	Brobenah Prince ..	4 D.	A. W. Currell, Cobden
364	Bromley Mac ..	5 D.	Buchanan Bros., Rochester West
1319	Bronze Eagle ..	6 P.	A. L. Hamilton, Corryong
1297	Broomfield Royal	A. D.	E. Meek, Streatham
340	Broughdoun Underslade	A. D.	J. Henderson, Baulkamaugh
985	Brown Alexander	A. D.	W. Studman, Lucknow
722	Brunstane Impress	6 D.	K. H. Parker, Bannockburn
506	Bull Plain Hero ..	3 D.	J. F. Kelly, St. James
466	Bull Plain Majestic	3 D.	E. Bott and Son, Corowa, N.S.W.
996	Bungar Scotty ..	4 D.	T. L. Rodgers, Vervale
485	Burfield Flash Knight	4 D.	R. P. Nuske, Lorquon
392	Burnbank Chief	5 D.	E. Mibus, Katyil
1444	Burn Brae Craig..	5 D.	Miss C. Ryan, Sunshine
918	Burnfoot's Pride ..	5 D.	C. W. Joiner, Orbost
371	Burnwood Lawyer	3 D.	J. McIntosh, Merrigum
1488	Bustard.. ..	6 T.	C. W. Poke, Smithton, Tas.
1396	Byland's Brilliant	A. D.	S. J. Armstrong, Karamomus
592	Cambria Duplicate	4 D.	G. D. Bartury, Woomelang
1120	Canusa	A. T.	W. F. Weigall, Couangalt
923	Capitalist ..	A. D.	A. K. Urquhart, Hexham
145	Captain Mac ..	6 D.	W. Marke, Girgarre East
904	Captain Douglas..	5 D.	Sheedy Bros., Cororooke
395	Captain Jake ..	5 D.	Mrs. M. J. Murphy, Rainbow
1464	Captain Lochiel ..	A. L.	Mrs. A. Haigh, Garfield
607	Captain Pinemont	3 D.	W. R. Hill, Meringur
202	Captain Regulus..	A. D.	Phillips Bros., Tatyoon

* *Note.*—Age in years. A., aged; D., draught; L., light; P., pony; T., thoroughbred.

STALLION REGISTER 1938–39—*continued.*

Cert. No.	Name.	Age* and Class.	Owner and Address.
739	Captain Slade ..	A. D.	W. G. Burns, Lemon Springs
82	Captain Wood ..	A. L.	J. A. Menzel, Hamilton
869	Caravis	A. P.	E. McKay, Wodonga West
1352	Carngham Favour	A. D.	Pearce Bros., Kewell North
91	Carnlea Baron Chief	6 D.	W. Cook, Dlapur
785	Carnlea Willie Star	5 D.	C. W. Eason, Buninyong
637	Carnoustie Silver King	3 D.	C. J. Cable, Boort
341	Carunga ..	6 D.	S. G. Hayward, North Wangaratta
855	Cavalcade ..	A. D.	Tucker Bros., Jung
782	Cedar Lodge Headlight	4 D.	L. Abraham, Nyah West
1336	Centredale ..	A. D.	R. McKenzie, Yarram
1421	Ceren Prince ..	6 D.	J. Rumbold, Laanecoorie
1105	Charming Derby..	6 L.	T. R. Greskie, Katandra
1384	Chello	6 P.	F. Cooper, Rutherglen
1113	Chief Alex ..	A. D.	C. E. Howe, Epsom
813	Chief Douglas ..	A. D.	R. S. Brunt, Kyabram
1036	Christmas Eve ..	A. P.	R. E. Gardiner, Yannathan
730	Cimbrian ..	A. T.	E. R. Potts, Tongala
970	Circus	4 P.	C. H. Ryan, Wodonga
1013	Civilian ..	A. T.	A. J. Niklaus, Peechelba
647	Clarkvale Rising Tide	3 D.	J. Moroney, Tongala
255	Clarkvale Squire ..	A. D.	Executors of the Estate of the late J. H. Rogers, Yarraville
203	Claybank's Captain	6 D.	P. D. Cattanach, Hopkins' Tank
470	Claybank's Horos	4 D.	W. H. Gibbins, Galah
1079	Claybank's Napoleon's Master	6 D.	C. F. Hahnel, Timberoo South
206	Claybank's Pride..	A. D.	Mrs. Geo. Booley, Galah
342	Claybank's Pride..	6 D.	C. Murfitt, Kiamal
494	Claybank's Repence	4 D.	F. J. Glen, Walpeup
256	Claybank's Sammy	A. D.	V. S. Carter, Merrinee
343	Claymore Junior..	A. P.	G. Chirnside, Pura Pura
207	Clearfield Dignity	A. D.	C. H. Pearson, Horsham
117	Clematic Major ..	A. D.	W. S. Heily, Buln Buln
1272	Cleveland Viceroy	A. D.	H. M. Parken, Horsham
1393	Cliffdell ..	A. D.	W. G. Hall, Talbot
680	Clifton King ..	A. D.	W. J. Poke, Smithton, Tas.
911	Clinton's Pride ..	5 D.	M. Toomey, Trentham
374	Clitheroe Knight..	5 D.	A. A. Mills, Naring East
219	Clonmore Marksman	3 D.	M. M. Davies, Kamarooka
854	Clonmore Premier	A. D.	W. Elphinstone, Millgrove
436	Cloyne's Echo ..	A. L.	E. Close, Mansfield
870	Cock o' the North	A. D.	N. C. Hodgson, Hedley
952	Cole King ..	A. L.	P. Donoghue, Wonthaggi
885	Colequest ..	4 L.	Wm. Cozens, Leongatha
570	Colinton Black Prince	6 D.	C. J. Gough, Mansfield
1302	Comet	6 P.	E. Tyson, Tabilk
257	Commodore ..	A. P.	E. J. Wright, Flynn's Creek
84	Commodore Nut ..	A. P.	J. Manifold, Weerite
935	Commodore Tam	3 P.	J. Manifold, Weerite
46	Conqueror ..	A. D.	C. J. Bowd, Sea Lake
1355	Coonara Champion	A. D.	R. V. Colliver, Cora Lynn
529	Coorara Flash Ian	A. D.	G. C. Bellinger, Hopetoun
397	Coorara Premier ..	3 D.	L. W. Brown, Hopetoun
721	Cooring Dale ..	A. D.	A. N. Hamilton, Bannerton
648	Coppice Prince Craig	5 D.	R. H. Chambers, jun., Koyuga
536	Corn Vale Champion	4 D.	P. Dalby, Arcadia
1161	Corporal Kelvin ..	A. D.	E. D. McCann, Lake Charm
667	Count Bingen ..	A. L.	F. E. Sanders, Netherby
1425	Count Zarynoff ..	A. D.	J. M. Egan, Bunding
1164	Crackall ..	A. L.	W. E. Ryan, Molyullah
1395	Craig, Athol ..	A. D.	Mrs. M. Ryan, Cosgrove
718	Craig Avon ..	A. D.	W. E. Moore, Rochester
822	Craigend ..	A. D.	D. Murphy, Rochester
1376	Craighill Holmar..	5 D.	T. J. Opie, Mirboo North
1345	Craigie	A. D.	W. B. Dixon, Ventnor, Ph. Is.
1085	Craigie Again ..	6 D.	G. H. Loats, Brooklet
1035	Craigie Bold Venture	A. D.	A. Arnold, Warracknabeal
474	Craigie Crichton ..	5 D.	J. Fuller, Mitre
438	Craigie Lad ..	A. D.	T. McGrath, Minyip
233	Craigie McLennan	A. D.	L. J. Smith, Hopetoun
1217	Craigie Malcolm ..	3 D.	J. Mills and Sons, Finley, N.S.W.
1201	Craigie Marshall..	3 D.	—, Garvin, Ariah Park, N.S.W.
644	Craigie Master Peace	5 D.	J. Yetman, Patchewollock
731	Craigie Pioneer ..	4 D.	W. Mathieson, Werribee
1034	Craigie Refiner ..	A. D.	A. Arnold, Warracknabeal
925	Craigie Viceroy ..	6 D.	H. J. Bunge, Sheep Hills
1087	Craigie Winalone	A. D.	J. A. Tweddle, Waala
363	Craig Laddie ..	4 D.	D. Murphy, Nanneella South
355	Craig of Hazeldean	A. D.	L. J. Dishon, Stavely
164	Craig Park Pride	6 D.	Whinray and Sons, Lake Rowan
241	Craig's Jack ..	6 D.	A. J. La Pouple, Heathcote
1368	Cressbrook Stamp	6 D.	J. E. Cross, Lemon Springs
1024	Crighton's Tim ..	A. P.	S. A. Greaves, Narre Warren
163	Cromdale Star ..	A. D.	E. A. Altmann, Rainbow
1432	Cruncher ..	A. D.	F. Quick, Brim
234	Crystal Jock ..	6 D.	C. A. Taylor, Brimin
132	Culbo	A. P.	A. W. Thomson, Hamilton
845	Cullivel Evergreen	A. D.	W. N. and F. A. Lord, Mitta Mitta
963	Cymbrel ..	A. L.	S. Hancock, Poowong South
1334	Cymro Harold ..	A. P.	H. Robertson, Wallacedale
510	Cymro Lad ..	5 P.	C. H. Burkinshaw, Wareek
1174	Cyndette ..	A. P.	J. T. Kelly, Briagolong
1165	Cypress Grove Baron View	A. D.	J. W. Dudley, Euroa
83	Cyric	A. T.	Boyd Bros., Koroit
828	Dahlen General ..	A. D.	J. Teague, Mystic Park
171	Dalawney Again ..	A. D.	M. J. Hooper, Towaninnie
1103	Dalcrombie ..	A. D.	J. H. Roberts, Lalbert
235	Dalholm Monarch	6 D.	J. B. Ferguson, Waubra
1478	Dalla Baron ..	A. D.	R. J. Croft, Morkalla
1359	Dalla Derby ..	A. L.	F. W. Shillito, Yendon
853	Dalla Direct ..	A. L.	D. Gonne, Ballarat
974	Dallavaddy ..	6 D.	T. McManus, Pimpinio
209	Dally's Flash Clyde	6 D.	A. K. Hart, Warracknabeal
951	Dalmore Again ..	A. D.	Milliard Bros., Dean's Marsh
1006	Dalmore Dan ..	A. D.	J. E. Wilkinson, Crowlands
714	Dalmore Prince ..	A. D.	Mrs. B. Frankel, Merrinee
1482	Dalmore's Choice..	A. D.	A. G. Turnbull, Coleraine
582	Dalradiant ..	A. D.	J. P. Fraser, Beaufort
210	Dandy	A. P.	W. W. Kennedy, Murtoa
162	Dandy	6 L.	W. H. Gibbins, Galah
1483	Dandy	A. P.	Executors of the Estate of the late V. Little, Iona
495	Dandy Boy ..	5 P.	J. H. T. Powell, Becac
172	Dandy Boy ..	6 P.	L. Fox, Coleraine
1179	Dandy Luck ..	A. P.	Mrs. M. L. Johnson, Doreen
844	Dandy's Pride ..	A. P.	A. E. Clark, Mack's Creek
161	Dark Prince ..	6 T.	P. C. Nixon, Orbost
1025	Darkspur ..	6 P.	Wm. Morcombe, Burrumbeet
915	Dark Vin ..	5 L.	P. J. Richmond, Wedderburn
796	Darnley.. ..	A. D.	J. F. Blight, Cowangie
986	Dart	A. P.	P. L. Heenan, Coleraine
1088	Dave Douglas ..	A. D.	C. Hurnall, Lillimur
1057	Daylesford King..	A. D.	W. W. Stephen, Dimboola
116	Dehlura Banker's Fortune	A. D.	B. Schultz, sen., Ni Ni Well
1212	Dehlura Scottish Glenalmond	A. D.	Phillips and Ross, Congupna Rd.
1092	Deltical ..	A. T.	Starling and Russell, Tongala
1406	Delavan Derby ..	A. L.	M. Percy Smith, Wyuna
1219	Denison Duke ..	4 D.	J. Anderson, Heyfield
236	Depression ..	A. D.	C. H. McDonald, Kerang
989	Derwent Derby ..	6 L.	T. A. Johns, Drung South
991	Desert Pos ..	A. L.	J. Hewish, Euroa
1204	Deval	A. L.	T. McManus, Pimpinio
551	Deverondale ..	6 D.	Jackson and McCluskey, Strathmerton
889	Devonlea Brilliant Craig	5 D.	J. G. Michie, Woodleigh
740	Devonshire (Imp.)	A. T.	T. C. Manifold, Lismore
567	Devon Spear ..	A. L.	L. P. Tyquin, Sunbury
96	Diblitz Minor of Shetland Heights	A. P.	J. T. Laidlaw, Hamilton
68	Diblitz of Pennywells	A. P.	J. T. Laidlaw, Hamilton
638	Dinna Forget ..	A. D.	Stepnell Bros., Scotsburn
1211	Direct Alto ..	A. L.	Mrs. M. L. Heard, Noradjuha

* *Note.*—Age in years. A., aged; D., draught; L., light; P., pony; T., thoroughbred.

STALLION REGISTER 1938-39—*continued.*

Cert. No.	Name.	Age* and Class.	Owner and Address.
599	Direction ..	4 P.	J. E. Sage, Somerville
852	Direct Star ..	6 P.	J. Johnson, Poowong
552	Dixie Pronto ..	A. L.	J. J. Gilbert, Devenish
1146	Dominate ..	6 P.	T. Scroggie, Terang
830	Donachie ..	6 T.	T. Shelley, South Geelong
1172	Donald March ..	A. D.	W. Tuck, Annuello
916	Don Dillon ..	5 L.	J. S. Oxley, Strangways
1323	Don Flash ..	6 L.	G. T. Barber, Birchip
1442	Don Lionel ..	A. L.	E. F. Hallam, Warracknabeal
468	Donowellan Favorite	4 D.	J. M. Connell, Murra Warra
381	Don't Inquire ..	4 P.	A. Cowell, Euroa
1130	Doolin Carlyle ..	4 D.	W. O. Tonissen, Burneluith Q'land
258	Dooling Slade Avon	A. D.	E. McManus, Sea Lake
232	Double Court ..	A. T.	J. Pierce and Wm. Wheeler, Towong
95	Douglas Again ..	A. D.	J. A. Pollard, Mansfield
479	Douglas Lion ..	4 D.	E. Denham, Karween
1371	Douglas Patrician	A. D.	C. A. Campbell, Noradjuha
515	Douglas Royal ..	5 D.	E. A. Dennis, "Kulkine Station," Mildura
1216	Drakucia ..	3 T.	W. S. Gathergood, Freeburgh
526	Dranoels Pride ..	4 D.	D. J. Leonard, Millbrook
1484	Drumcross Success	A. D.	E. R. Kossatz, Netherby
810	Drum Hazel ..	6 D.	R. Matson, Timmering East
47	Drumry's Pride ..	A. D.	R. S. Rowan, Strath Creek
81	Dryazel Flash Boy	6 D.	Ferrier Bros., Birchip
639	Dryazel Superb ..	4 D.	Ferrier Bros., Birchip
369	D's Allan ..	4 D.	H. E. Ward, Parwan
623	D's Model ..	5 D.	J. Boyle, Watchem
19	D's Strachan (Imp.)	4 D.	Gaulke Bros., Tarranyurk
63	D's Victor ..	6 D.	J. T. Flockart, Birchip
351	Dunduff Gold Standard	A. D.	E. and R. Hehr, Woolert
1347	Dunduff Signet ..	A. D.	W. J. Cobbledick, Bunbartha
713	Dunira James ..	A. D.	G. A. Williams and Sons, Walpeup
259	Dunlea Sunray ..	A. D.	J. Egan, Leichardt
1251	Dunure Blend ..	A. D.	J. S. Gull, Kenmare
1198	Durham ..	6 P.	W. T. Cox, Moolort
260	Dusky Dandy ..	A. P.	W. Lang, Glengarry
27	Earldene ..	4 D.	P. L. Williams and J. B. Ward, Miram
26	Earlwood King Brilliant	3 D.	H. E. Stephan, Wail
572	Early Morn ..	A. D.	G. H. Powell, Lillimur
816	Eastern Drift ..	6 L.	C. G. K. McCarthy, Kaniva
1199	Eastern Sovereign	6 T.	W. T. Cox, Moolort
616	Eastern Renown..	5 D.	J. Price, Mologa
211	Ebony Stamp ..	A. D.	Tallent Bros., Berrybank
1123	Eclypse ..	A. D.	G. W. Wakefield, Walpeup
231	Eldorain ..	A. L.	S. L. Dorrington, Lorquon
1229	Ellangowan ..	A. D.	W. Walter, Tatura
131	Ellerslie Commander	A. D.	F. M. Cheatley, Elmore
1320	Ellerslie Dale ..	A. D.	J. Hegarty, Turriff
299	Ellerslie Masterpiece	5 D.	I. R. Southwell, Linga
1033	Emerson ..	A. T.	A. Arnold, Werrigar East
1294	Emfred	A. T.	R. Biggar, Waaia
1485	Enfield Hero ..	A. D.	T. J. Opie, Mirboo North
596	Ennisvale Favour	6 D.	W. J. Dixon, Donald
48	Enterprise ..	A. D.	Perkins Bros., Rainbow
651	Epic	4 T.	E. J. Colliver, Tatura
94	Ercildale Norval..	A. D.	C. Gillespie, Bradvale
573	Eskdale Nugget ..	A. D.	Thos. Ley, Eskdale
1095	Ettrick Baron ..	6 D.	T. Draper, jun., Yackandandah
344	Eureka Raven ..	3 D.	A. A. Stokes, Abbotsford
1220	Eureka Welcome..	5 D.	H. Christensen, Tyers
93	Everlasting Dale..	A. D.	A. E. Cox, Alma
230	Everton (Imp.) ..	6 D.	C. H. McDonald and Sons, Kerang
136	Ewendene ..	3 D.	R. R. McDonald, Mannerim
995	Example Craig ..	A. D.	J. Walsh, Sutherland
345	Excalibur ..	4 D.	F. P. Smith, Kellor
1282	Fabricator Supreme	A. D.	A. Young, Horsham
1300	Factotum ..	A. D.	L. G. Haydon, Glenthompson
261	Fairboy ..	A. P.	H. L. Pendergast, Benambra
1456	Fair News ..	5 L.	J. Brown, South Melbourne
1344	Fairview Briton ..	A. D.	C. A. Troeth, Heywood
12	Fairview Duke ..	5 D.	H. T. O'Reilly, Bleak House
62	Fairview Good Hope	A. D.	W. Cozens, jun., Leongatha
353	Fairview Great Hope ..	A. D.	H. Trimble, Pine Lodge
990	Fairview Remerkable	5 D.	C. S. Rodda, Warracknabeal
30	Fairview Oversure	4 D.	C. S. Rodda, Warracknabeal
1102	Fancy's Star ..	6 D.	John Bell, Merino
61	Farleton Bold ..	A. D.	W. G. Wilkinson, Yarrawonga
450	Farleton Bold Record ..	A. D.	R. Crozier, South Morang
502	Farleton Maribou	3 D.	R. R. Ball, Drysdale
501	Farleton Regal Tide	4 D.	A. Dickins, Corowa
741	Farleton Seawave	A. D.	H. E. Poulton, Hopetoun
666	Fashiondale ..	6 D.	A. Ford, Princetown
755	Fashion's Pride ..	4 D.	H. Priestly, Carrum
470	Feather View Flower Dignity	5 D.	T. G. Bartlett, Gerang Gerung
814	Federal Knight ..	A. D.	A. T. Barnard, Mongan's Bridge
702	Fenwick Bauble ..	3 P.	Mrs. A. D. Maclean, Yan Yean
703	Fenwick Firebrand	3 P.	Mrs. A. D. Maclean, Yan Yean
80	Fenwick Nugget ..	6 P.	Mrs. A. D. Maclean, Yan Yean
704	Fenwick Roxana..	4 P.	Mrs. A. D. Maclean, Yan Yean
1271	Fenwick's Pride ..	A. D.	J. J. Grinter, Boosey
137	Fernbank Comet..	6 D.	M. Gibbs, Baxter
188	Fernbank Gold Standard	6 D.	E. Smith, Warragul
770	Fern Grove Craig	4 D.	J. E. Tupper, Blowhard
723	Fernkloff (Imp.) ..	A. T.	R. G. Ritchie, Mansfield
693	Fighting Top ..	A. T.	Executors of the Estate of the late T. Robertson, Moyne Falls, Macarthur
482	Finalist (Imp.) ..	4 D.	E. F. Jenz, Katyil
450	Financier ..	6 D.	Stepnell Bros., Scotsburn
765	Fine View Favour	A. D.	Melbourne and Metropolitan Board of Works, Melbourne
262	Fine View Premier	A. D.	H. Cook, Wilkur South
1252	Fine View Print..	A. D.	T. Spong, Coleraine
715	Fine View Squire	A. D.	E. Young, Mansfield
1181	Finley Direct ..	A. L.	H. S. Minchin, Picola
676	Fitzdale ..	6 D.	Sutton Bros., Berriwillock
938	Flash Baron ..	5 D.	J. Mulheron, Swan Marsh
1022	Flash Boy ..	A. D.	Coombs Bros., Mangalore
221	Flash Bute ..	A. D.	State Research Farm, Werribee
1253	Flashbute's Viceroy	A. D.	F. C. Newton, Nambrok
49	Flash Douglas ..	A. D.	A. E. Ballinger, Garup
942	Flashlight Again..	5 D.	M. L. Synan, Fish Creek
665	Flash Mark ..	A. D.	S. Clark, Bundalaguah
1160	Flash of Fenwick	A. P.	P. Murtagh, Tahara Bridge
1414	Flash of the North	A. D.	G. R. Hildebrand, Leitchville
398	Flash Pine ..	5 D.	A. Collis, East Melbourne
1023	Flash Trelawney..	6 D.	J. C. Maple, Karawinna
1340	Flash Trust ..	A. L.	W. J. Davies, Wail
742	Flash Voyage ..	A. L.	C. T. Evans, Rathscar
520	Fleudential ..	5 T.	J. E. Light, Quantong
1016	Fleurbridge ..	A. L.	J. W. Chace, Warracknabeal
620	Fleur Grey ..	5 P.	A. R. Macleod, Mininera
879	Foreman ..	A. D.	W. J. Thompson, Cowangie
716	Forest Dale ..	A. D.	H. J. Williamson, Rainbow
173	Foxlow Lord Trevor	A. D.	J. T. Tweddle, Berwick
817	Franklyn Viceroy	6 D.	J. J. Quinn, Elmore
1140	Fred La ..	A. L.	P. J. Thompson, Krowera
926	Full Power ..	A. T.	W. C. McKinnon, Annuello
675	Gainswood ..	A. L.	A. E. Herrmann, Dimboola
263	Gallant Jock ..	A. D.	Mrs. M. E. Gordon, Lismore
79	Gallant Kerrston..	A. D.	W. J. Beanham, Lilliput
191	Gallant Macarthur	A. D.	T. Nankervis, Diggora South
760	Gallant Prince ..	3 D.	Melbourne and Metropolitan Board of Works, Melbourne
1245	Gamble Pronto ..	3 L.	J. Notman, Reservoir
212	Game	6 L.	A. A. Wallis, Servicetон South
229	Game Boy ..	A. D.	Ethel M. Kirk, Donald
1254	Gamekeeper ..	6 T.	R. Newton, Nambrok
1168	Garrio	6 T.	F. J. C. Martin, Kumbarilla, Queensland
488	Garry	4 P.	P. H. Cook, Tallangatta
1472	Gasconade ..	A. T.	T. Kelly, Barham

* *Note.*—Age in years. A., aged; D., draught; L., light; P., pony; T., thoroughbred.

STALLION REGISTER 1938-39—*continued.*

Cert. No.	Name.	Age* and Class.	Owner and Address.
1142	Gay Choice ..	A. D.	J. Carew, Kilcunda
160	Gay Dan ..	A. D.	A. F. W. Brady, Bolton
1125	Gay Fergus ..	A. D.	J. Trethowan, Rockbank
886	Gay Print ..	5 D.	L. G. Whelan, Outtrim
1349	Gay Robin ..	A. D.	W. Irvine, Orbost
159	Gem of Manor (Imp.)	A. P.	W. E. Clinton, Heidelberg
587	General Bingen ..	5 L.	A. J. Free, Lalbert
1082	General Clyde ..	A. D.	W. W. Poole, Slaty Creek
78	George Athol ..	6 P.	Humphrey Bros., Cressy
786	Gigantic ..	5 L.	W. A. Morgan, Donald
213	Gillingall ..	A. T.	W. D. Armitt, Bindi
941	Girrahween Onward	5 D.	E. W. Tischler, Dimboola
362	Glen Alto ..	5 P.	W. T. Mustey, Rochester
467	Glenaradene ..	4 D.	W. G. Wilkinson, Yarrawonga
242	Glen Ayr ..	A. D.	S. Edwards, Towonga Roadside
1341	Glen Baron Belmont	A. D.	T. Gilcrist, Rutherglen
174	Glen Bower Bounty	A. D.	W. Heard, Noradjuha
1288	Glenburn Laddie..	A. D.	L. Martin, Gowanford
1348	Glencairn Rob Roy	A. D.	W. and L. Oliver, Diggora West
641	Glendalough Favourite	5 D.	M. W. McLoughlan, Birchip
758	Glendalough Monarch	4 D.	J. Sorraghan, Bylands
366	Glendervale Roy..	5 D.	J. A. Scurrah, Musgrove's Pt.
1077	Glen Footprint ..	A. D.	A. E. Heard, Numurkah
993	Glengarry ..	A. L.	K. J. Noye, Ruffy
1223	Glengyle ..	A. P.	C. Jones, Moyhu
649	Glenholme Model Roy	4 D.	L. Taylor, Tongala
992	Gleniris Flash Baron	4 D.	W. D. Edwards, Hopevale
1287	Gleniris Norman..	A. D.	G. T. Wallis, Serviceton
718	Gleniris Willie ..	A. D.	N. Ellis, Quantong
871	Glen Isla ..	A. D.	F. S. Perry, Corack
787	Glen Isle ..	5 D.	G. B. Hooper, Drumanure
604	Glen Laddie ..	5 D.	R. J. Jasper, Pine Grove East
1159	Glen Mac ..	A. D.	A. D. Thompson, Wyuna
743	Glen Major McKie	A. D.	W. M. Graham, Picola North
1419	Glenmere Craig ..	A. D.	J. Rumbold, Laanecoorie
15	Glen Newton Bold Chief	5 D.	A. Wohlers, Jung
1224	Glenrowan Desmond	6 D.	G. L. Byrne, Kewell North
265	Glenrowan Scott..	6 D.	O. Byrne, Kewell North
1032	Glen Royal ..	6 D.	J. J. Holdsworth, Streatham
22	Glenvoirlyn Duke	5 D.	W. J. Westendorf and Sons, Dimboola
487	Glenvoirlyn Flash Baron	3 D.	A. T. Haeusler, Jeparit
1244	Globepool's Image	5 L.	A. Turner, Notting Hill
1182	Globe's Image ..	A. L.	J. Ohlin, Gooramadda
893	Glory's Pride ..	4 P.	W. Studman, jun., Bairnsdale
224	Gold Digger ..	A. D.	Werribee Research Farm, Werribee
650	Gold Dust ..	5 L.	A. Collard, Tongala
266	Golden Brew ..	A. L.	A. Cameron, Tahara Bridge
496	Goldendale ..	5 P.	A. L. Beal, Birregurra
943	Golden Glimmer ..	5 P.	B. J. and M. Freeman, Lang Lang
756	Golden King ..	5 D.	F. McDonald, Queenscliff
175	Goldfinder ..	6 P.	G. Nelson, Cressy
1171	Goldie	4 P.	T. W. Bowden, Won Wron
1415	Goodwood Boy 2nd	A. L.	P. J. McCurry, Nanneella
1335	Goose-Step ..	A. T.	H. D. Smerdon, Ballarat
980	Gortland ..	A. T.	J. and T. Daffy, Swan Marsh
34	Gortred ..	4 L.	G. Smith, Balranald, N.S.W.
631	Gowan Leigh Dignity	5 D.	M. J. Sheridan, Donald
744	Gowan Premier ..	A. D.	C. Mitchell, Leongatha
1031	Gracfus ..	A. T.	G. O'Mealy, Warrnambool
130	Graculus ..	A. T.	S. Loveridge, Corowa, N.S.W.
267	Grand Harold ..	A. L.	W. C. A. Free, Leitchville
1374	Grand Opera ..	A. L.	J. J. Guidice, Kangaroo Flat
790	Grand Robin ..	5 L.	Mrs. M. A. McDonald, Ultima
1	Grand Vue Desire	3 D.	F. A. Lehmann, Lismore
448	Great Alex ..	A. D.	J. Molloy, Towaninnie
447	Great Derby ..	A. L.	L. W. Crapper, Nellborough
1030	Greenlea Obligato	A. D.	J. V. Trethowan, Rockbank
888	Green Mantle ..	5 L.	A. P. Wade, Glen Alvie
446	Green Sioux ..	A. L.	C. T. Lucas, Pomborneit
890	Gregordene ..	3 D.	J. A. Leishman, Kingston
107	Grey Fox ..	6 P.	L. J. Weatherley, Mortlake
92	Grey Ronald ..	6 T.	J. G. Morrison, Teesdale
945	Guilshire ..	5 T.	D. and M. Sweeney, Yarram
445	Gum Park Brilliant	6 D.	R. G. Tucker, Jung
77	Gum Park Scottie	6 D.	E. O. Hellyer, Mt. Gambier, S.A.
1050	Gum View Chief..	5 D.	Ben Rogers, Mepunga East
611	Gum View Choice	5 D.	G. H. Weckert, Carina
1029	Gum View Prince Buchlyvie	A. D.	J. Byron, Stawell
109	Gum View Renown	3 D.	W. J. Westendorf and Sons, Dimboola
1221	Gus	5 L.	V. E. Welsh, Raglan
872	Gwalia	A. P.	E. McKoy, Wodonga
37	Happy Bird ..	6 T.	Mt. Sturgeon Pty. Ltd., Dunkeld
225	Happy Jack ..	A. L.	C. Nolte, Coleraine
674	Hard Times ..	A. D.	O. Martin, Tongala
705	Harvest King ..	A. T.	H. T. McPherson, Bairnsdale
36	Harviestoun Hugh	A. D.	P. L. Williams, Miram
1101	Hawksdale Defiance	A. D.	C. C. Hawker, Lillimur
1309	Hawksdale Echo..	A. D.	J. W. McDougall, Katandra
772	Hawksdale Gallant	5 D.	H. Wharton, Manangatang
29	Hawksdale Renown	4 D.	C. C. Hawker, Lillimur
228	Hawthorn Major..	6 D.	Haw Bros., Yando
1225	Hazeldene ..	A. D.	D. Trewick, Elmore
635	Hazeldene Benedictine	5 D.	C. Hewitt and Sons, Werrigar East
60	Hazeldene Demonstrator	6 D.	Donnan Bros., Watchupga
23	Hazeldene Eldorado	4 D.	W. J. Westendorf and Sons, Dimboola
51	Hazeldene Ideal ..	5 D.	J. H. Meyer and Sons, Kaniva
484	Hazeldene Monievrachie	3 D.	A. C. Jorgenson, Katyil
31	Hazeldene O.K. ..	4 D.	A. G. Dahlenburg, Winiam East
158	Hazeldene Reid ..	A. D.	R. G. Ervin, Winiam
795	Hazelwood Cavalcade	5 D.	Fawcett Bros., Towaninnie
28	Heather Brae Baron	4 D.	W. H. Allan, Broughton
827	Heather Jock ..	A. D.	J. S. Leyden, Skipton
1330	Heather Mac ..	A. D.	J. A. Emmerson, Clear Lake
967	Heathermont Alexander	4 D.	L. F. Gilpin, Labertouche
157	Heath Villa Avon	6 D.	H. B. Newell, Murra Warra
444	Heirloom	A. D.	E. and C. Powell, Teddywaddy
516	Here's Luck ..	5 P.	L. H. Penny, Merrinee
1366	Heritage ..	A. L.	T. W. Ballintine, Cosgrove
1051	Hero	3 P.	Ben Rogers, Mepunga East
293	Hero	A. P.	W. J. Greaves, Lyndhurst
895	Hero's Chief ..	5 D.	W. Dettmann, Kyneton
1399	Highfield's Flash Prince	6 D.	A. Nagorcka, North Hamilton
1065	Highlad Scotty ..	6 D.	N. A. Procter, Caulfield
1467	Highland Mac ..	A. D.	Thos. Parr, Strathallan
812	High Monarch ..	6 D.	N. H. Wills, Minyip
1453	Hill Park Masterpiece	A. D.	A. W. Watson, Nullawil
583	Hill Park Masterstroke	A. D.	R. J. Jones, Maryborough
900	Hill Park Sunrise	4 D.	Cassidy Bros., Joyce's Creek
443	Hill View Laddie..	6 D.	J. J. Shiells, Warrnambool
102	Hill View Rising Star	A. D.	J. J. Gleeson, Southern Cross
988	Hill View Rising Sun	A. D.	W. A. McLellan, Bungaree
745	His Highness ..	A. D.	J. T. Monahan, Gnarwarre
525	Hollyside Vue ..	3 D.	J. J. Downey and Son, Wallace
441	Holton	A. D.	T. Moroney, Barncdown
605	Homebush Ben ..	4 D.	B. Lawrence, Lockington
1362	Homestead Simon's General	A. D.	L. J. Midgley, Minyip
1459	Homevale Gift ..	3 D.	J. McDonald, Winchelsea
1452	Homeward Bound	A. L.	J. McCamey, Tinamba
437	Honest Mac ..	A. D.	E. A. Abott, Fish Point
961	Horoscope ..	A. D.	F. Baker, Jung
1473	Hotspur ..	A. P.	Mrs. M. Wills, Carngham
440	Hugo	A. T.	O. W. Fisher, Tawonga Roadside
539	Huon Don ..	3 L.	W. H. Young, Shepparton

* *Note.*—Age in years. A., aged; D., draught; L., light P., pony; T., thoroughbred.

STALLION REGISTER 1938-39—*continued.*

Cert. No.	Name.	Age* and Class.	Owner and Address.
373	Hyde Park Aviator	5 D.	J. H. and J. C. Wilkinson, Kyabram
215	Ian Again ..	A. D.	H. G. Pearce, Murrayville
1331	Ibn Badaween ..	A. Arab	Mrs. B. Folliott-Sandford, Riddell's Creek
964	Ideal Flashday ..	A. D.	A. and C. Dufty, Netherby
50	Ideal Roy ..	A. D.	B. R. Paynter, Echuca
1361	Ideal Slade ..	A. D.	A. Munro, Ouyen
1322	Ideal Viceroyal ..	A. D.	C. and P. McNaughton, Cavendish
214	Illoma Dignity ..	6 D.	J. Dixon and Sons, Ullswater
76	Indian Light (Imp.)	A. Arab	Mrs. D. Maclean, Yan Yean
775	Inverness Flash Laddie	5 D.	J. P. Fraser, Beaufort
273	Irish Boy ..	A. D.	J. Cody, Ballarat East
129	Jack Briton ..	A. D.	G. W. and D. N. Greenaway, St. Arnaud
1098	Jackie Coogan ..	A. L.	F. G. Annett, Branxholme
101	Jack O'Diamonds	A. L.	V. Downes, Winchelsea
135	James Erskine ..	4 D.	Geo. Fishburn, Mt. Moriac
1292	James McElwyn ..	4 L.	E. Allan, Ondit
1326	Jester of Shetland Heights	A. P.	Mrs. M. Small, San Remo
673	John Dixie ..	A. L.	J. Glenn, Tylden
1255	John Holton ..	A. D.	E. J. Leeder, Cope Cope
508	Johnson ..	5 P.	H. Mitchell, Brimin
1381	Joker's Pride ..	A. P.	C. Bassett Smith, Kyabram
1364	Jollie Clouglockelty	A. D.	R. Williams, Dunbulbalane
274	Julius Caesar ..	6 P.	Adams Bros., Staghorn Flat
1053	Kallista Baron's Chief	5 D.	Ben Rogers, Mepunga East
761	Kardella Douglas	4 D.	A. D. McMurray, Werribee
439	Kardella Flashlad	6 D.	E. C. Watters, Tallygaroopna
120	Kardella Imprint	A. D.	R. O. Borgelt, Nhill
14	Kardella Renown	3 D.	T. Maddern and Sons, Blackheath
13	Kardella Scottish Victor	5 D.	T. Maddern and Sons, Blackheath
581	Karomin ..	A. T.	F. C. Coy, jun., Struan
944	Katie's Boy ..	4 L.	W. H. Jordan, Mirboo North
33	Kawaran Strathslade	5 D.	Hawkins Bros., Tocumwal
1365	Kelly	A. P.	J. Curran, Horsham
156	Kelm's Prince ..	A. D.	Nicoll Bros., Hoddle Range
268	Kelso Ideal ..	A. D.	W. J. Renney, Berriwillock
288	Kelso Marquis ..	A. D.	A. H. Rathjen, Woodglen
269	Kelso Monarch ..	A. D.	J. H. Fuge, Rutherglen
794	Kelso Pride ..	5 D.	A. C. Newell, Culgoa
1256	Kelso Sensation ..	A. D.	J. T. Watkins, Euroa
1226	Kelvin	A. D.	J. Opie, Werribee
732	Kenmuir Gambler	4 P.	C. E. Stray, Kilmore
1158	Ken's Pride ..	A. P.	W. A. McMeekin, Kyneton
779	Ken Tellis ..	4 L.	A. Sims, Winlaton
275	Kenwyn Standard	6 D.	McQueen Bros., Waubra
1450	Kerrick ..	A. D.	McFarlane Bros., Anakie
1257	Kerston Junior ..	6 D.	Geo. Luckie, Springhurst
919	Khancobin ..	5 P.	C. C. Pendergast, Benambra
216	Killawney ..	A. D.	Hicks Bros., Underbool
380	Kilmacolm Excellence	4 D.	S. Wilson, Beulah
379	Kilmalcom Special	3 D.	S. Wilson, Beulah
1210	Kilmore ..	A. D.	C. and L. McDonald, Timmering
746	King Billy ..	A. D.	J. I. Collins, Banyan
204	King Dale ..	6 D.	T. Makeham, Cannie
905	King Dale ..	A. D.	E. R. Hopkins, Yinnar
1227	King Dooley ..	A. L.	J. C. Brooker, Bairnsdale
927	King Douglas ..	A. D.	G. Melke, Dimboola
1209	King Favour ..	A. D.	E. W. Linke, Beaufort
75	King Heedless ..	A. T.	J. Manifold, Weerite
1054	King Munster ..	A. L.	W. J. Davidson, Nangeela
588	King Patrus ..	5 L.	T. W. Bridgett, Charlton
1312	King's Prize ..	A. D.	J. R. McErvale, Trawalla
74	Kin's Fancy ..	A. D.	J. W. Gray, Morkalla
789	Kirkcaldy Flash Everest	5 D.	P. B. Malone, Leichardt
729	Kirkcaldy Flash Len	3 D.	F. A. Lehmann, Lismore
821	Kirndeen Monarch	A. D.	F. Wood, Tallangatta
799	Kola Pronto ..	4 L.	S. E. Hancock, Ultima
1100	Kolora Premier ..	6 D.	H. a'Beckett, Underbool
1096	Komura's Son ..	A. P.	W. C. Morrison, Pakenham East
848	Koonburra ..	6 T.	D. Waddell, Bairnsdale
664	Kooringal Boy ..	A. D.	W. Hodges, Macarthur
584	Kooringal Viceroy	A. D.	K. Kruger, Croxton East
937	Korongah Allen ..	4 D.	G. A. McNabb and Sons, Irrewillipe
1228	Korongah Bar None	A. D.	J. C. Whitehead, Minhamite
43	Korongah Bold Ian	A. D.	T. Wills, Streatham
884	Korongah Craigwillie	A. D.	A. W. Hendy, South Pascoe Vale
1192	Korongah Glen Arthur	A. D.	A. W. Bodey, Jung
218	Kowai Sensation..	A. D.	W. G. Ballantine, Cosgrove
538	Kurra Glen Craig	5 D.	Wm. Brown, jun., Mt. Scobie
1411	Lackamore ..	A. L.	W. R. Cahill, Ky Valley
270	Laen View Scottish Boy	6 D.	J. J. Dickeson, Laen North
41	Laird of Lanarch	6 D.	W. Robinson, Armstrong
1157	Lake Erie Chief ..	6 D.	G. S. R. Sprunt, Ardmona
780	Lakefield Ebony Prince	4 D.	J. B. Ferguson, Waubra
88	Lake Marsh Honor	6 D.	A. R. Keller, Jeparit
1422	Lamorna Romaduke	6 D.	H. Hargreaves, Kurraca West
481	Lanar's Thrill ..	5 T.	W. Sue, Gol Gol, N.S.W.
1194	Langdale ..	A. D.	G. A. Pope, Donald
1351	Lansdale Again ..	A. D.	A. Carstensen, Woodside
276	Lansdale Everest..	A. D.	A. M. Gardiner, Kerrisdale
155	Larchwood ..	6 T.	W. E. Clinton, Heidelberg
1060	Largo	A. D.	M. McKinnon and Sons, Berriwillock
277	Last Pos ..	A. P.	A. Gillies, Noorat
413	Late Fashion ..	A. D.	C. Summerhayes, Boigbeat
1061	Lavereen Monarch	A. D.	J. Fehring, Hornfield
1318	Lavereen Prince Buchlyvie	A. D.	A. L. Hamilton, Corryong
1176	Leapfrog ..	A. L.	C. Campbell, Glenorchy
791	Leeds Grove Favour	5 D.	J. A. Collins, Fenton's Creek
1012	Leezar	A. Arab	T. K. Watson, Strathdownie
624	Le Grand Flash Douglas	5 D.	H. Cook, Wilkur South
480	Le Grand Footprint	5 D.	L. Rogers, Karrawinna
294	Le Grand Footsure	A. D.	R. J. Simpson, Alexandra
1357	Leura Flash Mac	4 D.	F. A. McRae, Wallup
102	Leurgan Elderchief	A. D.	P. E. Spicer, Dimboola
793	Leurgan Jock ..	3 D.	C. Robbins, Nullawil
1117	Lexel Lea Brazen Laddie	A. D.	J. H. Roberts, Laibert
1310	Lexel Lea Norval	A. D.	R. Wright, Borung
642	Lexel Lea Slade ..	4 D.	W. A. Wright, St. Arnaud
590	Lexel Lea Sun Stroke	5 D.	J. T. Wright, Charlton
565	Lincoln Voyage ..	A. L.	J. Glenn, Tylden
759	Linden Laird ..	4 D.	J. R. Nash, Carlo
692	Lipton	A. T.	L. Hill, Lake Bolac
1388	Liston Duke ..	A. D.	C. S. Rodda, Warracknabeal
1321	Little Comet ..	A. P.	H. F. Hoysted, Wangaratta
747	Little Eumarrah..	A. P.	H. W. R. Painter, Mincha
1156	Little Maz ..	A. P.	Wm. Cullinan, Lakes Entrance
1183	Little Ned ..	A. P.	T. Humbert, Prairie
154	Little Tich ..	A. P.	W. Anderson, Mepunga West
176	Lochend ..	A. P.	R. H. Chester, Melwood
1429	Lochinver General	5 D.	H. Morrison, Dumosa
643	Loch Lomond Scottie	5 D.	T. R. S. Gilmour, Cope Cope
399	Lochness Britannia	3 D.	E. J. Semmler, Hopetoun
532	Lock Garry Crystal	6 D.	R. Neven, Burramine
1042	Lock Garry Marshall	6 D.	J. Currie, Balmattum
1208	Loddonlea Panacea	A. D.	T. Lees, Rochester
585	Loddonlea Sunflower	6 D.	A. F. Board, Yarrara
778	Loddon Lea Triumph	5 D.	C. L. Sewell, Glenlyon
412	Loddon Lea Victory	A. D.	McKenzie Bros., Longlea
278	Loddon View General Nat	A. D.	J. B. Ferguson, Waubra
411	Lone Park Hero..	A. D.	Lindsay Bros., Bessiebelle
100	Longerenong Boxer	6 D.	T. Jolley, Craigieburn
410	Long View Bonnicfactor	6 D.	J. S. Lang, Richmond Plains

* *Note.*—Age in years A., aged; D., draught; L., light; P., pony; T., thoroughbred.

STALLION REGISTER 1938–39—*continued.*

Cert. No.	Name.	Age* and Class.	Owner and Address.
1367	Lord Aldie ..	A. D.	R. T. Redenbach, Tambo Upper
820	Lord Allenby ..	A. D.	G. Oxley, jun., Gre Gre North
719	Lord Buchlyvie ..	6 D.	T. F. Kerr, Yeoburn East
987	Lord Cedric ..	A. D.	J. A. Lord, Boigbeat
559	Lord Clyde ..	6 D.	J. E. L. Soutter, Benambra
542	Lord Dundonald..	A. D.	Mrs. A. V. Shard, Katandra West
489	Lord Ivo ..	3 D.	M. R. Stevenson, Tallangatta
1407	Lord Morley ..	4 P.	P. Higgins, Maffra
279	Lord of the Isles..	A. D.	C. H. Feldtmann, Major Plains
477	Lord Patterdale ..	5 D.	J. Morris, Ouyen
574	Lord Pronto ..	A. L.	R. H. Painter, Mincha
566	Lord Roma Dale	A. D.	G. L. Marwood, Tandarra
568	Lord's Pride ..	6 D.	L. P. Tyquin, Sunbury
541	Loricar	A. L.	H. B. Fitzpatrick, Orford
1354	Loughrea Alex ..	6 D.	Colliver and Sons, Cora Lynn
1286	Louis Direct ..	A. L.	G. B. Cochran, Ballarat
690	Lowland Lad ..	A. D.	C. C. Adkins, Arawata
280	Lowland's Marshall	A. D.	Willett Bros., Warrenbayne
524	Lucerne Vale Rising Moon	5 D.	N. J. W. Quick, Mollongyhip
691	Lynatha ..	6 L.	A. Spiers, Aspendale
1155	Lyndale ..	A. D.	A. B. Burns, Turriff
1084	Lyndale II. ..	A. D.	O'Callaghan Bros., Boorongie
456	Lyndale Knight ..	5 D.	Hancock and Wakenshaw, Bambill
1468	Lyndhurst ..	A. D.	A. E. Perry, Hopetoun
905	Lyndhurst Intent	3 D.	Geo. Bennett, Chinkapook
1258	Lyndhurst Master	A. D.	Sieber Bros., Mulcra
748	Lyndhurst Master Craig	A. D.	J. F. Delahunty, Murtoa
239	Lynson	A. P.	G. R. Nicholas, South Melbourne
917	Lyntor	3 L.	J. Satori, jun., Clydesdale
1184	Mac	A. D.	E. O. Manuel, Kerang
1449	Mac Direct ..	A. L.	Charity Bros., Serpentine
540	Macduff.. ..	A. D.	R. and J. Galloway, Majorca
424	Mac Graig ..	A. D.	A. E. Shaw, Rochester
622	Maclands Duplicate	4 D.	L. M. Bailey, Gama
707	Macrobert ..	6 D.	J. Davison, Donald
1448	Macsbrae Macgregor	3 D.	McFarlane Bros., Anakie
706	McLeish ..	A. D.	R. Wight, Woodside
1430	Magic Railway ..	A. P.	N. A. Cameron, Piries
1195	Major Clyde ..	A. D.	H. G. Burge, Landsborough
2	Major Dawn ..	3 D.	F. A. Lehmann, Lismore
1465	Major Mac ..	A. D.	H. Henderson, Barraport
476	Mallee Voyage ..	5 L.	A. E. McMahon, Ouyen
708	Malphacar ..	A. L.	E. R. Hopkins, Yinnar
873	Manway ..	6 T.	P. M. and C. L. Meek, Mininera
73	Marbell of Shetland Heights	A. P.	Mrs. A. D. Maclean, Yan Yean
121	March	A. L.	J. Kinnimouth, Winchelsea
59	Marcus Junior ..	A. L.	Blair Bros., Lara
1267	Mark Hazel ..	A. P.	R. A. Sadler, Taminick
7	Mark Radiant ..	5 D.	T. Waters, Wallup
1476	Marquis of Meadowbrook	A. D.	Stagg Bros., Bairnsdale
682	Marvel of Earlshall	A. P.	Mrs. C. G. Maclellan, Malvern
423	Maryvale Lildal ..	A. D.	J. M. White, Netherby
1438	Mascarades ..	4 T.	G. Woods, Fingal, Tasmania
709	Master Bob ..	A. P.	A. T. Currell, Timboon
677	Master Brook ..	A. L.	J. V. Foster, Richmond
58	Masterdale ..	A. D.	A. C. Kerr, Kerang
11	Masterdene ..	4 D.	J. H. Meyer and Son, Kaniva
491	Master Jack ..	5 D.	R. F. Lawler, Ouyen
290	Master Jim ..	6 P.	T. Maddison, Tawonga Roadside
683	Master Relief ..	6 D.	J. Pitman, Colac
1270	Master Stamp ..	6 D.	C. T. Lucas, Pomberneit North
1431	Masters Duplicate	6 D.	R. J. Thomson and Son, Brim
281	Masterstroke ..	A. D.	H. Parish, Winchelsea
977	Mastertone ..	A. D.	W. H. Mitchell, Sandford
507	Maydale Royal Blend	3 D.	D. King and Sons, Rutherglen
377	Mayfield Supurb ..	5 D.	A. J. McCarron, Nathalia
422	Mazarron ..	A. T.	Betts Bros., Benambra
72	Meadow's Surprise	A. D.	D. J. Davies, Korumburra
56	Melinite.. ..	A. T.	J. Hamilton, Inverloch
1342	Melrock Double Flash	6 D.	G. D. McEwen, Boyeo
621	Melrock Flash Dalmore	5 D.	H. Harrop, Mininera East
1291	Melrock Flash Viceroy	A. D.	A. Jorgenson, Katyil
1002	Melrock Flash Victor	A. D.	A. G. Mibus, Croxton East
1020	Melrock Roy Dale	A. D.	C. H. James, Quambatook
901	Melrock Superior..	3 D.	A. Todd, Beulah
531	Melton's Trust ..	A. T.	D. N. Gready, Sheep Hills
560	Meredindale ..	6 D.	Mrs. K. Brady, Gooram
1410	Merry Prince ..	A. D.	R. G. Langley, Monbulk
710	Merry Prince ..	A. D.	R. M. Rollason, Porepunkah
237	Merton's Bold Boy	A. D.	P. Hearps, Lucyvale
103	Mer-Vue Pride ..	6 D.	W. G. Dennis, Heyfield
1058	Mid-day ..	A. P.	J. Bannam, Wallacedale
1068	Middlerigg King ..	A. D.	Hearn, Gunbower
500	Middlerigg Prince	4 D.	H. H. Ferguson, Echuca
1153	Midnight Voyage..	A. L.	A. D. Thompson, Wyuna
1481	Mikado	A. L.	A. G. Turnbull, Tyrendarra
537	Miliroon Majestic	4 D.	J. T. Weddle, Murchison East
1338	Milton Cavalier ..	6 D.	J. Steward, Neerim East
576	Milton Huon ..	A. L.	E. Bartels, Maldon
530	Milton Mauritius..	A. L.	Whiting and Vincent, Ballarat North
421	Minton Bells ..	A. L.	Mrs. A. A. Laidlaw, Ararat
282	Mnemon King ..	A. T.	G. L. Gibbs, Orbost
295	Model Bute ..	A. D.	Hansen Bros., Barnawartha
1067	Mokanger ..	A. L.	A. C. Miller, Barham, N.S.W.
632	Montbelle Keynote	3 D.	Mrs. M. E. Middleton, Hamilton
283	Monte	A. D.	C. A. Farrell, Boigbeat
1162	Mont Harold ..	A. L.	Mrs. M. Canning, Mildura
1457	Montrose ..	A. D.	T. Stewart, Wycheproof
1446	Moondarra Pride..	A. D.	Mrs. W. Taylor, Thornton
663	Moorabool Pride ..	A. P.	J. S. Thompson, Bannockburn
153	Mooreland's Pride	6 D.	Ractliffe Bros., Bullengarook
1259	Mordeen ..	A. L.	W. S. Drury, Penola, S.A.
177	Moredun Baron ..	A. D.	L. Wallan, Mepunga East
687	Moredun Hero ..	6 D.	J. D. Roache, Woolsthorpe
104	Morning Prince ..	A. D.	J. Draper, Yan Yean
609	Morning Star ..	4 D.	A. Scroggie, Glenormiston South
178	Morocco Chief ..	A. D.	J. Mildenhall, Ensay
727	Mossbank Mac ..	A. D.	J. M. Smith, Camberwell
896	Mossdale's Choice	4 D.	Clerk Bros., Carlsruhe
128	Mountain Hero ..	A. D.	S. E. R. Cobain, Sale
296	Mount Baron ..	A. D.	A. Cheesley, Barnawartha
402	Moving Star ..	6 L.	M. T. Wills, Pomborneit North
897	Mr. Clever ..	A. T.	G. H. Thomson, Kyneton
1474	Mr. Das ..	5 L.	F. B. Rowe, Newstead
189	Mulcra's Pride ..	A. D.	E. G. Mickan, Sunset
420	Mundell.. ..	A. D.	B. Storey, Teddywaddy
1260	Mungo Supreme ..	6 D.	Geo. Luckie, Springhurst
672	Munificent ..	A. D.	J. H. Meyer, Kaniva
1124	Myna	5 L.	J. Rapsey, Tallangatta
57	Myora Baron ..	A. D.	Allen Bros., Kenmare
1261	Myora Baron Mac	A. D.	Rigney Bros., Chinkapook
396	Myora Baron Signet	5 D.	H. Griffiths, Kenmare
656	Naldera Bold Bott	4 D.	H. Eckel, Minyip
984	Naldera Bold Chief	A. D.	L. Coburn, Swan Hill
1486	Napoleon ..	A. P.	T. C. Manifold, Camperdown
1044	Naroo Jester ..	A. L.	J. T. Phelan, Dargo
1152	Naseby Baron ..	A. D.	W. Magrath, Yanac South
1185	Naseby Belmont Stephen	A. D.	D. McCormack, Rosebery
965	Naseby Briton ..	A. D.	A. C. and A. Dufty, Lorquon West
310	Naseby Flashmore	A. D.	J. H. Tonissen, South Hamilton
636	Naseby Monarch..	4 D.	D. R. Chace, Warracknabeal
771	Naseby Regalslade	4 D.	A. Wharton, Manangatang
461	Naseby Sailor ..	5 D.	A. G. Gardner, Cavendish
284	Naseby Stephen ..	6 D.	R. J. McPherson, Coleraine
361	Nattai's Prince Mark	5 P.	Mrs. E. C. Robertson, Macarthur
193	Nazar	A. Arab	J. Jelbart, Albury East, N.S.W.
152	Neil's Gift ..	6 D.	P. B. Malone, Leichardt
127	Netherha Drew ..	A. D.	W. J. Eades, Colac
1328	Netherha Factor..	A. D.	F. K. Oberin, Goornong

* *Note.*—Age in years. A., aged; D., draught; L., light; P., pony; T., thoroughbred.

STALLION REGISTER 1938–39—*continued.*

Cert. No.	Name.	Age* and Class.	Owner and Address.
1262	Netherhall ..	A. D.	J. Douglass, Buckrabanyule
934	Netherwood Allslade	4 D.	R. J. Wilson, Camperdown
359	Netherwood Reflector	5 D.	G. W. Przibilla, Wilkawatt, S.A.
1443	New Derby ..	A. L.	L. J. King, Barraport
597	Newfields Pride ..	A. D.	R. J. Baldwin, Gre Gre South
1114	New Lu Lu ..	4 L.	L. J. King, Barraport
285	Newlyn Bold Silk	A. D.	T. A. Myers, Dean
577	Newlyn Donald Don	A. D.	C. Shingles, Stratford
1049	New Ribbon ..	4 L.	F. H. McLelland, Boort
983	Nimitybelle Mac..	A. D.	H. Chessals, Youanmite
486	Ni Ni John ..	5 D.	C. G. B. Schultz, Ni Ni Well
843	Nivek	A. P.	J. P. Arthur, Caulfield
1290	Nokila	A. T.	J. G. Adams, Mansfield
378	Noralunga Flash Step	5 D.	A. R. Trask, Galaquil East
389	Noralunga Gold Bar	5 D.	A. B. and E. B. Anderson, Yea
1265	Noralunga Slademond	6 D.	A. T. Drinkwater, Annuello
874	Norseman Laddie	A. D.	A. H. Hooper, Goorambat
517	Northwood Chief	4 D.	E. F. Higgins, Merrinee
1235	Northwood Chimes	3 L.	C. F. Pryor, Eltham
462	Northwood Flash Bute	4 D.	E. A. Walker, Cowangie
1047	Norwood ..	6 D.	A. Jones, Dowerin, W.A.
286	Noved	6 L.	R. L. Edwards, Lancefield
625	Nulkwynne Duplicate	5 D.	J. L. Belleville, Watchem
194	Nullabean ..	6 P.	T. H. Wills, Ouyen
1423	Nungar ..	3 P.	G. D. Helly, Cloverlea
1332	Nutshell ..	A. P.	Mrs. H. D. Young, Hamilton
618	Oakcrest Flash Roy	6 D.	W. J. Hosking, Oakvale
521	Oakdale Ballochmile	5 D.	L. Saunder, Horsham
25	Oakdale Rhymore	3 D.	Stephan Bros., Wail
619	Oakleigh Prince Charlie	4 D.	C. A. Graham, Rupanyup
419	Oaklyn Stryvers Mac	A. D.	B. Mills, Yarra Glen
556	Oakview Dignity..	3 D.	M. J. Hocking, Yalloak
418	Obligations Footprint	A. D.	A. F. Dahlenburg, Salisbury
997	Ochertyre Widgiewa	A. D.	D. Ervin, Central Mologa
417	O'Connor's Pride..	A. D.	W. Fletcher, Woorinen South
958	Oora Park Onward	A. D.	L. J. Taylor, Lake Boga
1243	Outpost.. ..	A. T.	C. Quinn, Ascot Vale
1339	Oxford	A. D.	J. Bamfield, Russell's Bridge
390	Pal	6 P.	K. D. Lane, Merino
557	Parkfield Hero ..	5 D.	A. Hocking, Tandarra
416	Parkfield Pride ..	A. D.	J. McG. Johns, Dooen
1011	Parkfield Stamp ..	A. D.	A. J. Trask, Irrewarra
10	Parliwidgee Desire	3 D.	J. H. Meyer and Sons, Kaniva
358	Parliwidgee Refiner	5 D.	E. Venning, Pinnaroo
522	Parliwidgee Select	4 D.	L. A. E. Grosser, Serviceton
126	Parsee (Imp.) ..	A. T.	A. Brown, Rupanyup
688	Pataudi ..	A. L.	A. K. Buckley, Buffalo
1283	Patrician Craig ..	A. D.	H. Williams, Dunolly
151	Pearlyn II. ..	A. L.	F. W. Bowden, Won Wron
1143	Pedro Chief ..	A. L.	A. D. McLennan, Derrinal
1052	Pepper	3 P.	Ben Rogers, Mepunga East
415	Perquator ..	A. T.	Geo. Smith, Romsey
610	Pertaboi ..	4 L.	I. S. Black, Terang
920	Pie Pie	4 P.	T. J. McNamara, Omeo
749	Pine Grove Radiance	A. D.	J. G. Fisher, Pinnaroo
1435	Pincholm Admiral	A. D.	Mrs. M. Cullis, Stawell
811	Pincholm Baron ..	A. D.	W. P. Clark, Tongala
783	Pincholm Prestige	5 D.	J. Burton, Goschen
657	Pine Lea Bold Hero	5 D.	E. W. Reading, Callawadda
39	Pine Lea Belmont Print	A. D.	J. Russell, Hesse
946	Pine Lea Flash Footprint	4 D.	G. Hiscock, Willowmavin
1151	Pine Lea Pride ..	A. D.	J. McMillan, Swan Hill
626	Pine Park Baron	4 D.	A. T. Walder, Watchem
766	Pine Park Donald	3 D.	E. Hehr, Woolert
767	Pine Park Fashion	3 D.	E. Murphy and Son, Yarraville
1001	Pine Park Style ..	5 D.	Hopkins Bros., Glenluce
483	Pine Vale Dennis	4 D.	J. F. Beeson, Macarthur
633	Pine Vale Fort ..	3 D.	J. Davison, Donald
1343	Pine Vale Laddie	A. D.	F. J. Densley, Dalyston
774	Pine Vale Scotty..	4 D.	T. Buckley, Romsey
738	Pistol Voyage ..	6 L.	Mrs. G. I. Kenny, Pinnaroo
640	Planet	3 D.	T. J. Taylor, Mollongghip
910	Play Boy ..	5 L.	A. J. Millar, Hopevale
1128	Playfair.. ..	A. D.	Mrs. W. Salt, Teddywaddy
1298	Pleasant Dale ..	A. D.	Telford Bros., St. Arnaud
878	Pocket Edition ..	A. P.	B. Keenan, Yarrawonga
959	Pompadour ..	4 P.	A. J. Trask, Irrewarra
809	Powder Puff ..	6 P.	Morey Bros., Yabba North
1263	Powerscourt ..	A. T.	G. Luckie, Springhurst
179	Predomino ..	A. L.	C. Kelly and Co., Caramut
309	Premier Prince ..	A. D.	H. A. Sudholz, Murtoa
686	Present ..	A. P.	J. F. Mitchell, Ebden
1369	Pride of Argyle ..	A. D.	M. Moloney, Leitchfield
553	Pride of Belle Vue	A. D.	J. H. Grylls, Laanecoorie
960	Pride of Briton ..	A. D.	A. Mackenzie, Pigick
851	Pride of Didyme..	A. P.	Geo. Brough, Cheltenham
357	Pride of Glencorrie	5 D.	E. H. Mitchell, Huon
849	Pride of Honor ..	A. D.	O. J. Pohlner, Woorak
1186	Pride of Scots ..	A. D.	W. Filby, Huntly
671	Pride of the Lake	A. T.	E. R. Scown, Kaniva
776	Prince	5 D.	C. C. Tucker, Raglan
1207	Prince Alexander II.	A. D.	S. E. Hamlyn, Winchelsea
658	Prince Allenby ..	4 D.	H. H. Duxson, Wallaloo
1383	Prince Aron ..	6 D.	Amarant Bros., Wattle Creek
356	Prince Audley ..	5 P.	J. Lear, Mitre
627	Prince Brunstane	5 D.	L. Arnold, Warracknabeal
1175	Prince Craigie ..	A. D.	J. H. Sellwood, Undera
1039	Prince Dignity ..	A. D.	J. V. Haggblom, Sea Lake
608	Prince Fusilier ..	5 L.	J. A. Roulston, Henty
1313	Prince Gay ..	A. D.	P. D. Richards, Gladysdale
913	Prince Henry ..	4 P.	K. M. Kenyon, Sale
1073	Prince Imperial ..	A. D.	A. Collins, Watchupga
346	Prince Leopold ..	4 D.	D. Weir, Wyalong, N.S.W.
1475	Prince McQuaid ..	A. D.	G. A. Anderson, Lascelles
205	Prince Owen Glendower	A. P.	A. J. Cooper, East Brunswick
1308	Prince Que ..	A. P.	H. D. Bromley, Mitcham
979	Prince Wallace ..	A. D.	J. Pole, Nullawil
97	Prince Wigton ..	A. D.	J. Strobridge, Brookville
1187	Prince William ..	6 D.	O. A. Corkfield, Nowie
950	Quarrington Lad..	A. D.	T. A. Hamblin, Tooleen
892	Quasimodo ..	6 T.	G. C. Tye, Dalgangal
1021	Quattas Belmont	A. D.	M. Lindsay, Staghorn Flat
198	Quiamong ..	A. T.	N. F. Armytage, Melbourne
1455	Radiant Derby ..	A. L.	W. A. Riedell, Tongala
528	Radiant Douglas..	3 D.	E. Ruchel, Meringur
940	Radiant Kinsman	5 D.	C. C. Thomson, Patchewollock
1041	Rafa	A. P.	L. B. Jones, Yarram
868	Ranor	A. L.	J. V. Haggblom, Sea Lake
601	Raseel Lad ..	3 P.	Mrs. G. Burkett, Echuca
720	Raseel Laddie ..	6 P.	W. D. Cochrane, North Poowong
906	Rashid	5 P.	G. A. Bennett, Chinkapook
614	Rattler	5 D.	D. R. White, Janiember East
603	Ray's Derby ..	4 L.	W. C. A. Free, Leitchville
962	Recompense ..	A. D.	F. H. Baker, Jung
180	Red Douglas ..	A. D.	L. S. Wandel, Underbool
1215	Reedsdale Lad ..	6 D.	H. H. Turner, Lyndhurst
695	Refiner	5 D.	N. T. McMillan, Pier Millan
181	Reflection ..	A. D.	D. Reardon, Mansfield
1150	Reflector ..	A. D.	P. N. Burdett, Hopetoun
949	Regal Dal ..	A. D.	Millard Bros., Deans Marsh
112	Regal Hiawatha ..	A. D.	G. E. Bowman, Dunluce
21	Regal King ..	3 D.	R. P. Greenaway, Horsham
372	Regal Star ..	4 D.	W. H. Oats, Mansfield
308	Reitcam Meluke ..	6 D.	J. McMillan, Avenel
840	Reliance ..	A. D.	J. Hunter, Murrabit
1404	Resolution ..	A. D.	D. R. Cameron, Sunshine
1076	Review	A. D.	A. E. Barbary, Woomelang
733	Ribbonwood's Echo	5 L.	A. Butcher, Croxton
1144	Richville Favourite	A. D.	W. Wyatt, Pallarang
1469	Riddell Romany Rajah	6 D.	R. Winterbottom, Cohuna
764	Riddell Romany Ruler	5 D.	A. Thompson, Werribee
1149	Rightaway ..	A. L.	G. H. Mitchell, Speed

* *Note.*—Age in years. A., aged; D.,draught L., light P., pony T., thoroughbred.

STALLION REGISTER 1938–39—*continued.*

Cert. No.	Name.	Age* and Class.	Owner and Address.
1015	Ring Master ..	6 D.	E. and V. Davies, Gringegalgona
662	Ringwood Crystal	6 D.	J. A. Davis and Son, Corowa, N.S.W.
414	Rising Dawn ..	A. D.	G. N. Pilmore, Gerang
1417	Rising Sun ..	A. D.	J. O'Bree, Piangil
891	Riversdale Chief ..	4 D.	H. T. Gilbert, Tarwin Lower
902	Riversdale Dell Boy	3 D.	F. W. Murphy, Kerang
750	Robert Bruce ..	A. D.	A. G. Evans, Lima East
797	Robert Mauritius	3 L.	N. E. Cockayne, Finley, N.S.W.
1242	Robert Roy ..	4 L.	Mrs A. Steiner, Ascot Vale
969	Robin Adair ..	4 D.	N. A. McDonald, Delegate River
882	Robinhood ..	A. D.	J. Slavin, Haddon
1090	Robin's Style ..	A. D.	S. B. Woods, Meringur
1241	Rob Roy Ditty ..	4 P.	W. E. Clinton, Heidelberg
1239	Rob Roy Kenna Hendy	3 P.	W. E. Clinton, Heidelberg
1240	Rob Roy Nigger..	4 P.	W. E. Clinton, Heidelberg
646	Rock Derby ..	4 L.	J. Power, Yambuna
1037	Rocket	3 L.	A. E. Rae, Gapsted
589	Roderick Dhu ..	5 D.	D. Blair, Buckrabanyule
660	Rodwac George ..	4 D.	W. J. Thornton, Baulkamaugh North
307	Romeo	6 P.	W. D. Armit, Bindi
1266	Rosalind's Pride ..	A. D.	G. F. Coles, Traralgon West
612	Roscoe Vague ..	3 D.	G. A. Bothe, Bambill
370	Rosebrae Bold Prince	5 D.	W. Gracie, Merrigum
306	Rosebrae Reflector	A. D.	A. Lynch, Meringur
928	Rosebray Masterpiece	A. D.	Kennett Bros., Kaniva
914	Rosebud's Pride ..	3 D.	H. Archibald, Sale
838	Rosedale II. ..	A. D.	H. Schuller, Rainbow
1470	Rosedale Again ..	6 D.	Mrs. E. Gilmour, Willenabrina
894	Rosedale Superb..	5 D.	G. Fitzpatrick, Maldon
382	Rosemont Lebbeus	5 D.	A. Muir, Picola
1206	Roseneath Ambition	6 D.	F. Sutton, Gredgwin
875	Roseneath Craig ..	A. D.	E. McKay, Wodonga
837	Roseneath Ivan ..	A. D.	W. Hay, Leongatha
514	Roseneath Pirate	5 D.	C. Carter, Karrawinna
490	Rosevier's Ben ..	5 D.	H. J. Jones, Jeparit
451	Rosevier's Duke ..	5 D.	W. R. and R. G. Bainger, Neuarpur
195	Rosevier's Flash Idol	6 D.	F. C. Coy, Woorndoo
763	Rosevier's Flashlight	6 D.	D. I. Gibson, Lismore
17	Rosevier's Liston	5 D.	Gaulke Bros., Tarranyurk
18	Rosevier's McQuaid	4 D.	Gaulke Bros., Tarranyurk
734	Rosewell ..	4 D.	W. Pizer, Kyneton
1097	Roslyn	A. P.	E. Allan, Ondit
20	Rosscrea Baron Craig	5 D.	J. Magee, Longerenong
454	Rosscrea Craigmore	4 D.	Geo. Grey and Son, Branxholme
523	Rosscrea Digger Craig	3 D.	R. H. Larcombe, Mt. Moriac
305	Rosscrea Master Craig	6 D.	Mrs. A. J. Lowrey, Walpeup
982	Ross Glen Callum	A. D.	H. C. Younger, Greta
929	Rostrata ..	A. L.	K. Urquhart, Hexham
352	Royal Albion ..	A. D.	J. Morgan, Clayton
426	Royal Bellman ..	A. D.	E. Mackley, Greenland Dam
304	Royal Belmont ..	A. D.	W. A. Creighton, Molesworth
113	Royal Cap ..	A. T.	T. G. Turner, Dergholm
562	Royal Captain ..	A. D.	G. H. Nunn, Tiega
1118	Royal Castle ..	A. D.	C. Hawker, Lillimur
1389	Royal Dale ..	A. D.	R. Morden, Nathalia
903	Royal Dale ..	3 P.	E. Allan, Ondit
670	Royal Dale ..	A. D.	Lynch Bros., Underbool
1487	Royal Direct ..	6 D.	J. Sutton, Fenton's Creek
1307	Royal Douglas ..	A. D.	Voigt Bros., Nhill
866	Royal Escort ..	A. L.	Coe Bros., Coleraine
659	Royal Fetter ..	4 L.	L. Butler, Marneo East
1426	Royal Flight ..	A. L.	A. J. Lane, Coleraine
561	Royal General ..	A. D.	Mrs. W. R. McAlpine, Hopetoun East
1066	Royal George ..	A. P.	S. O. Wood, Nagamble
287	Royal John ..	A. D.	M. W. Warde, Campbell's Forest
1040	Royal Kerrston ..	A. D.	F. Hamilton, Coonover Bridge
668	Royal King ..	A. T.	C. F. Simons, Fenton's Creek
684	Royal Mac ..	A. D.	W. J. Robinson, Truganina
409	Royal Mac ..	A. D.	A. Coe, Balliang
798	Royal Mac Onward	4 D.	G. H. Conway, Ultima
408	Royal Peter ..	A. D.	H. A. Hanson, Wyuna
1316	Royal Prince ..	6 P.	R. Browne, Tarwin
1408	Royal Prince ..	A. D.	J. B. Alexander, Bulga
578	Royal Redman ..	A. D.	E. McCabe, Underbool
427	Royal Rouge ..	A. L.	C. L. Wright, Flynn's Creek
1148	Royal Scotch ..	A. D.	C. F. Henke, Boolite
836	Royal Strabane ..	A. D.	J. Galloway, Majorca
1017	Royal Success ..	A. D.	Gallagher Bros., Eastville
1028	Royal Sunbeam ..	A. D.	G. Bennett, Chinkapook
1188	Royal Top ..	A. P.	J. R. McMeekin, Kerang
1074	Royal View ..	5 D.	Geo. Giddings, Sea Lake
1284	Roy Redmond ..	A. L.	E. B. Cochran, Ballarat
1375	Rufus	A. D.	G. Trower, Archdale
1093	Rushbrook Cairnbroggie	A. D.	R. Norman, Beeac
1234	St. Loyal ..	6 T.	W. Free, Cobur
1418	St. Ninian's Craigends	A. D.	D. McFarland, Birchip
726	St. Ninian's Royal Slade	4 D.	J. M. Smith, Melbourne
735	St. Ninian's Sailor Boy	4 D.	S. Erbs, Trafalgar
1048	St. Ninian's Slade	4 D.	Dickie Bros., Tungamah
71	Sacedon ..	A. T.	Mrs. M. E. Middleton, Hamilton
1238	Sachem ..	4 T.	W. F. Elliott, Warragul
591	Sailor	5 Arab	Miss M. G. Keats, Kerang
297	Sam Mack ..	A. L.	A. Cheesley, Barnawartha
835	Sandy Hurst ..	A. D.	S. Waters, Corryong
1064	Sanguine Select ..	A. D.	N. A. Procter, Caulfield
1196	Santa Claus ..	A. P.	W. C. Greaves, Monomeith
407	School Bells ..	A. P.	F. A. Wardle, Brim
1460	School Bells Junior	A. P.	N. Leith, Natimuk
405	Score Boy ..	A. D.	R. J. Free, Lalbert
1461	Scotch Cavalier ..	5 D.	Mrs. E. A. Miller, Yanac South
182	Scotch Crystal ..	6 D.	J. Culhane, Norong Central
1324	Scotch Drummy ..	A. D.	W. G. Young, Neerim
1274	Scotchie ..	A. D.	I. Kelly, Korong Vale
1115	Scotch Laddie ..	A. D.	H. A. De La Haye, Dandenong
428	Scotch Mixture ..	A. D.	Mrs. A. F. Downie, Waitchie
819	Scotch Thistle ..	A. D.	W. Gray, Yarraville
1451	Scotland Again ..	A. D.	J. Mulholland, Eurobin
1327	Scotland Forever..	A. D.	S. Rogers, Rainbow
1401	Scotlands Dignity	A. D.	A. Walters, Moyhu
292	Scottish Baron ..	A. D.	Ellwood Bros., Wallace
435	Scottish Chief ..	A. D.	J. Heyden and Sons, Pullut
1441	Scottish Crown ..	A. D.	J. W. Scott, Antwerp
114	Scottish Ideal ..	6 D.	G. A. Hipwell, Wee Wee Rup
1197	Scottish Laird ..	A. D.	M. J. Rogers, Tooan
887	Scottish Pride ..	4 D.	McLean Bros., Warragul
865	Scottish Star ..	A. D.	Mrs. I. Broome, Noorimbee
70	Scottish Tasman..	A. D.	E. Scott, Nooradjuha
1360	Shamrock Farm Pride	A. D.	A. Holmberg, Hunter
617	Shayden Fine Stroke	3 D.	H. P. Herrmann, Murtoa
434	Sheik Hadj ..	A. L.	Mrs. A. M. Cook, Moyhu
826	Shepards Masterstroke	6 D.	F. S. H. Crafter, Kewell North
226	Sherwood Endeavour	A. D.	S. Dunstan, Huon
661	Shirva Fort ..	A. D.	H. McCluskey and G. Jackson, Piree
628	Silver Bells ..	4 P.	H. Cook, Wilkur South
404	Silver Dale ..	6 D.	W. Marriott, Bentleigh
1078	Silver King ..	A. P.	A. E. Heard, Numurkah
503	Silver Lining ..	5 D.	A. Dickins, Corowa
1405	Silverlyn ..	A. P.	J. Cobain, Sale
948	Silver Marsh ..	A. P.	P. Donahue, Wonthaggi
1357	Silver Prince ..	A. D.	J. C. Baldwin, Torrumbarry
864	Silver Prince ..	A. D.	A. McCrum, Bunbartha
460	Silverstroke's Fancy	4 D.	W. Schroeder, Murrayville
970	Simarre ..	A. T.	E. McIlraith, Baulkamaugh North
1205	Simon Dale ..	A. D.	J. H. Bant, Carisbrook
788	Simon Dale ..	5 D.	E. Wilson, Llanelly
699	Simondale ..	5 D.	R. Shaw, Glenloth

* *Note.*—Age in years. A., aged; D., draught; L., light; P., pony; T., thoroughbred.

STALLION REGISTER 1938-39—*continued.*

Cert. No.	Name.	Age* and Class.	Owner and Address.
751	Simon's Son ..	A. D.	R. Butler, Newstead
700	Sir Banjo ..	6 P.	Mrs. P. Tullidge, Goornong
598	Sir Douglas ..	A. D.	Mrs. E. M. Scott, Carwarp
324	Sir Douglas ..	A. D.	W. McNamara, Dartmoor
105	Sir Guy ..	A. P.	A. G. Hunter, Seymour
931	Sir Percy Northcote	A. D.	Kennett Bros., Kaniva
880	Sir Peter ..	6 D.	F. H. Cannon, Boisdale
1178	Sir Richard III. ..	A. P.	W. Henderson, Grasmere
401	Sir Robert ..	A. D.	C. P. Tobin, Eskdale
1306	Sir Royal Charm	A. D.	P. T. Monaghan, Wymlet
433	Sir Stanley ..	A. P.	J. Wills, Carngham
403	Sligo	A. L.	C. Chrisholm, Cardigan
1136	Slip Knot ..	A. D.	T. Dickins, Swan Hill
752	Soldier Boy of Fenwick	A. P.	Mrs. A. C. G. Maclellan, Malvern
1305	Some Laddie ..	A. P.	C. Johnstone and A. Robinson, Corryong
1009	Somerton Douglas	6 D.	C. M. Treloar, Lorquon
183	Sorcerer ..	A. T.	C. Sutton, Fenton's Creek
134	Spartan ..	A. T.	R. G. Bryant, Neerim Neerim
1353	Spearearl ..	A. T.	G. Orrell, Elaine
1356	Spenagues Baron	A. D.	R. V. Colliver, Cora Lynn
1070	Springside Mac ..	A. D.	W. H. Penaluna, Boolarra
1346	Spring View Favour	A. D.	G. A. Daffey, Mitiamo
863	Squire Watson ..	6 D.	J. Garner, Bostock's Creek
1285	Stamperland Star	A. D.	Fullam Bros., Torrumbarry
829	Stanvale Pride ..	A. D.	Baker Bros., Stanhope
655	Stanvale Prince ..	3 D.	Baker Bros., Stanhope
1168	Stardom ..	A. T.	J. McClure, Auburn
69	Stardust ..	A. P.	C. H. Welsh, Violet Town
909	Star Patrol ..	3 L.	R. Sleep, Kenmare
1268	Starville ..	A. T.	C. Armstrong, Ballarat
580	Steel Wings ..	A. P.	J. Lynn, Orbost
753	Stirling Even-Tide	6 D.	C. R. Schultz, Woorak
390	Straight Argot ..	A. L.	S. Bolton, Mannerim
908	Strathdale ..	5 D.	J. H. Kaye, Carisbrook
459	Strathdalla ..	5 L.	H. Ahpee, Ararat
862	Strathlea Baron ..	A. D.	J. Garner, Bostock's Creek
115	Strathkellar Benefactor	A. D.	S. J. Lynn, Orbost
393	Strathore Angus ..	4 D.	J. Henderson, Baulkamaugh North
347	Strathore Scot ..	3 D.	A. D. Kerr, Shepparton
348	Strathore Wallace	3 D.	D. Adams, Melbourne
1471	Strathore Material	4 D.	S. T. Hawkins, Finley, N.S.W.
453	Strayon ..	5 T.	S. Price, Wallacedale
1154	Struan Major ..	6 D.	G. Murch, Darlington
272	Stylish Craig ..	A. D.	M. Noonan, Arcadia
1147	Stylish Top ..	A. L.	L. J. Bastow, Inglewood
384	Summerhill Laddie	5 D.	F. W. Patten, Baulkamaugh North
689	Summersby Donald	6 D.	A. V. Bond, Yinnar
196	Sunbeam Simon's Heir	A. D.	J. W. Long, Warcek
954	Sun Charm ..	A. T.	I. Milne, Colac
511	Sundial	5 D.	J. W. Woodfine, Ararat
1314	Sunny Baron ..	6 D.	A. Morley, Rutherglen
498	Sunnydale ..	4 L.	C. E. Maxwell, Murroon
1010	Sunnydale ..	A. D.	J. Minotti and Son, Strathlea
110	Sunnyfield's Chieftain	4 D.	A. H. Pietsch, Dimboola
1427	Sunnyland's Flash	A. D.	G. S. Gibb, Moyhu
505	Sunnyland's Hero	5 D.	J. T. Jones, Wilby
698	Sunnyland's Majestic	3 D.	Mrs. C. M. Allen, Wycheproof
792	Sunnyland's Tempo	3 D.	D. R. Morley, Nullawil
360	Sunny Jim ..	5 P.	J. W. Robertson, Macarthur
323	Sunnyland's Knight	6 D.	E. R. Morton, Drouin
473	Sunnyland's Lascelles	3 D.	A. H. Hooper, Goorambat
322	Sunnyside Norseman	A. D.	A. E. Buerckner, Tungamah
1191	Sunnyside Pride ..	6 D.	E. G. Griffiths, Cowangie
769	Surbiton Donald..	5 D.	H. E. Ward, Ballarat
368	Surbiton Ian ..	3 D.	H. E. Ward, Parwan
921	Surf Board ..	A. T.	A. K. Urquart, Hexham
1135	Sweet Bells ..	A. P.	H. Elliott, Bookaar
519	Sylva Banker ..	5 D.	W. H. Deckert, Diapur
1358	Tamar Baron ..	3 D.	H. J. Berryman and Co., Womboota, N.S.W.
1378	Tamar Favourite..	5 D.	W. G. Young, Neerim
697	Tamar Lancer ..	4 D.	T. Sutherland, Sulky
301	Taunton Premier..	6 D.	H. G. Jenz, Antwerp
122	Tearon	6 P.	P. Nott, Rutherglen
349	The Captain ..	3 D.	D. Adams, Melbourne
321	The Cavalier ..	A. D.	J. Leitch, Wodonga
1275	The Dux ..	A. D.	O. O. Scammell, Back Creek P.O.
457	The Gums Flowerdale	5 D.	D. Jardine, Maryborough
150	The Gums Masterdale	A. D.	W. H. Gibbins, Galah
912	The New Idea ..	5 D.	J. O. Hanson, Fernhill
3	The Night Patrol	A. L.	J. W. H. Marks, Ouyen
1038	The Shah ..	4 Arab	A. M. Cook, Wangaratta
932	The Swell ..	6 P.	L. Arnold, Warracknabeal
652	Thighe	5 P.	W. Wall, Murchison
1372	Thornfield Craig ..	A. D.	Parry Bros., Charlton
55	Thornlie Majestic	6 D.	R. R. McDonald, Mannerim
504	Thurso Liston Prince	3 D.	I. Davis, Corowa, N.S.W.
804	Timaru	A. D.	H. R. Ayson, Elmore
149	Timberlea Heroic	6 D.	S. Vale, Picola West
320	Timely Direct ..	A. L.	J. M. Cromie, Noble Park
1119	Timely Tim ..	A. L.	S. J. New, Bostock's Creek
1304	Timer King ..	6 P.	C. A. Lawrence, Apsley
899	Tinker-Dandy ..	3 P.	W. M. Bourke, Denison
465	Tinker Toy ..	5 P.	R. T. Jarvis, Cudgewa
1166	Tiny Tim ..	A. P.	B. A. McDougall, Barham
125	Toby	A. P.	A. W. Thompson, Hamilton
645	Tocum	4 P.	E. O. Bidstrup, Broadford
1129	Tommy Dodd ..	A. P.	J. Kelson, Kirkstall
1134	Tom Thumb ..	6 P.	J. Hope, Warragul
757	Tomygram ..	5 T.	L. J. Tomasini, Geelong
302	Tooma	A. D.	F. Dobinson, Cudgewa
1062	Top Score ..	A. D.	W. Fenton, Kerang
1276	Top Stream ..	A. D.	B. Hickey, East Trentham
956	Toy Boy ..	A. P.	W. R. and M. Gadd, The Glen
1189	Tractor's Rival ..	A. D.	J. Hadfield, Cann River
842	Tradesman ..	6 D.	R. A. Roulston, Henty
124	Trivento ..	A. T.	J. Smith, Whittlesea
1003	Trooper ..	A. D.	W. Holdsworth, Boinka
319	True Scotch ..	A. D.	C. Bowman, jun., Gunbower
1402	Tyrone Boy ..	5 L.	W. T. A. Martin, Tatura
725	Uley Benedict ..	3 D.	F. Baker, Jung
1428	Uley Chieftain ..	A. D.	G. S. Gibb, Moyhu
394	Uley Masterslade..	4 D.	J. Sheens, Penrith
994	Universal ..	A. D.	J. Burns, Benalla
1273	Valetta Archie's Honour	A. D.	W. Saunders, Heywood
1277	Valetta Baron Mac	A. D.	B. Frew, Marnoo
1222	Valetta Footprint	3 D.	F. H. Baker, Jung
9	Valetta Horoscot..	3 D.	F. A. Lehmann, Lismore
861	Valetta Lock Hero	A. D.	Dunstan Bros., South Jeffcott
8	Valetta Renown ..	4 D.	H. Bell, Wangaratta
1424	Valiant	A. T.	J. A. McKenzie, Shelford
1141	Valley Shepherd Lad	A. D.	R. E. Burkenshaw, Mooloort
534	Velma Scots Wa Hae	A. D.	H. C. Starick, Murtoa
6	Veradale For Ever	5 D.	N. Cameron, Somerset, Tas.
303	Viceroy Favourite	A. D.	W. Harris, Garvoc
712	Viceroy Imprint ..	A. D.	J. Heffernan, Noorat
148	Viceroy Premier ..	A. D.	V. G. Bailey, Werrimull
1370	Victor	A. P.	H. D. Moodie, Waggarandall
1075	Victoria Biologist	A. D.	Wood Bros., Epping
1177	Victoria Botanist	A. D.	W. Henderson, Grasmere
876	Victoria Double Flash	6 D.	A. C. Hodgson, Hedley
222	Victoria Flash Duke	4 D.	Research Farm, Werribee
981	Victoria Flash Jester	A. D.	T. Daffy, Swan Marsh
271	Victoria Flash Pat	A. D.	D. E. Holden, Katunga
123	Victoria Flash Patriot	6 D.	A. B. Chapman, Minyip
54	Victoria Flash Thong	6 D.	J. W. Norris, Balmoral
318	Victoria Major Wigton	A. D.	Grimmer Bros., Wickcliffe
1295	Victoria Northern Light	A. D.	T. M. Millar, Pearsondale
35	Victoria Pasha ...	5 D.	J. G. Kaire, Atherton Table Lands, Q'land.

* *Note.*—Age in years. A., aged; D., draught; L., light; P., pony; T., thoroughbred.

STALLION REGISTER 1938-39—*continued.*

Cert. No.	Name.	Age* and Class.	Owner and Address.
432	Victoria Prince Norval	A. D.	W. Munro, Gapsted
138	Victoria Solid Stamp	A. D.	W. J. Eades, Colac
1190	Victoria Vague ..	A. D.	Mrs. H. S. McEwan, Boonoonar
1091	Victor McLaglen..	A. D.	H. W. F. Lee, North Winton
1325	Victory	A. P.	E. E. Small, San Remo
1380	Vine Grove Captain	6 D.	A. Stokes, Abbotsford
431	Vio Malt ..	A. T.	J. A. Cain, Boxwood
67	Vulcan	A. P.	J. Gapes, Port Fairy
1137	V. Voyage ..	A. L.	D. Larkin, Euroa
629	Waikato Echo ..	3 D.	A. C. Walder, Watchem
754	Waikoura ..	A. D.	W. G. Burns, Lemon Springs
571	Walden Radiant Morn	A. D.	A. F. Boord, Yarrara
569	Waldens Drumcross	A. D.	C. Block, Goroke
762	Walla Park Triumph	4 D.	A. B. Paesch, Walla Walla, N.S.W.
1398	Wanstead Wedgewood	A. D.	Miss E. R. Angliss, Auburn
818	Wapilly ..	A. T.	J. Coe, Coleraine
430	War Lord ..	A. D.	T. Attenborough, Poowong North
184	Warrender Craig..	A. D.	Mrs. J. M. Robertson, Waubra
1083	Watchful ..	A. T.	A. Loban, Flinders
90	Watchful ..	6 D.	J. S. Newth, Whorouly South
147	Wee Charles ..	A. P.	J. Hawkins, Colac
38	Wee Charles ..	A. P.	W. Forster Woods, Melbourne
1059	Wee Key ..	A. P.	W. Lamb, Noorat
367	Welkin Gold ..	4 P.	H. C. Robertson, Tintaldra
111	Wemen	A. L.	Mrs. A. Schneider, Narre Warren North
400	Werndew Charmer	4 D.	R. A. Perkins, Rainbow
600	Werndew Emperor	4 D.	C. J. Liesfield, Rainbow
694	Werndew Flowerman	4 D.	P. J. Ryan, Chinkapook
1278	Werndew Masterman	6 D.	L. G. Hicks, Manangatang
314	Werndew Flash Footprint	6 D.	T. Parker, Pepper's Plains
1014	Werndew Golden Footprint	A. D.	J. A. Dalrymple, Warracknabeal
300	Werndew' Ambition	3 D.	L. V. Lackmann, Natimuk
1303	Werrap Browndale	A. D.	R. N. Dunn, Rupanyup
999	Werri Park Precedent	4 D.	F. G. McCormack, Boorhaman
16	Western Vale Banker	5 D.	M. J. Ryan, Broughton
1477	Weston Front ..	A. D.	J. K. Corcoran, Clarkfield
317	Weston Monarch	A. D.	J. H. A. Reichelt, Ni Ni Well
350	Westward ..	4 D.	R. L. Henderson, Burrumbeet
185	Whare Puni Desire	A. D.	F. A. Lehmann, Lismore
512	What's Wanted ..	4 D.	S. R. Meyer, Yarrara
66	White Olaf of Manor	A. P.	Mrs. A. D. Maclean, Yan Yean
1230	Widgiewa ..	A. D.	R. Bell, Sale
860	Widgiewa Alick ..	A. D.	D. Chisholm, Swan Hill
579	Widgiewa Belmont	A. D.	J. A. Roberts, Willenabrina
1063	Widgiewa Bill ..	A. D.	N. Proctor, South Caulfield
1279	Widgiewa Black Diamond	A. D.	A. E. Morey, Katandra West
777	Widgiewa Blue Ribbon	4 D.	W. J. Smith, Robinvale
146	Widgiewa Edward	A. D.	Executors of the Estate of the late W. G. Down, Koonda
53	Widgiewa Emblem	A. D.	A. S. Baulch, Buchan
1409	Widgiewa Fashion	A. D.	J. Price, Mologa
834	Widgiewa Glancer	A. D.	A. Crighton, Tungamah
1131	Widgiewa Intent..	A. D.	F. A. McRae, Wallup
1132	Widgiewa Knight	A. D.	F. G. Moss, Waaia
1458	Widgiewa Lebbens	A. D.	A. H. Hooper, Dookie
429	Widgiewa Mark ..	A. D.	G. Hicks, Miram
313	Widgiewa Model..	A. D.	F. Connelly, Kerang
1373	Widgiewa Ninian	A. D.	W. Robertson, Lake Boga
1007	Widgiewa Rosemont	A. D.	Mrs. M. E. Taggert, Bannerton
186	Widgiewarra ..	A. D.	F. W. Mitchell, Lalbert
376	Widgiewa's Model	5 D.	F. J. Lane, Woodfield
939	Wildfire.. ..	5 P.	C. E. Pettigrove, Macorna
187	William Grattan..	A. L.	G. Miller, Echuca
316	Willie Holton ..	A. D.	H. D. Boxall, Woomelang
1346	Willie McBride ..	A. D.	S. A. and J. O. Cheatley, Colbinabbin West
833	Willowbank Duke	6 D.	K. Cameron, Warracknabeal
1392	Willowbank Hero	A. D.	H. Adams, Undera
832	Willowbank Major	6 D.	Maher Bros., Tatura
52	Willowhurst ..	6 D.	Snelling and Co., Brisbane, Q'land
859	Wilma Dick Lee..	A. D.	R. W. Crozier, South Morang
1138	Windermere Intermediate	A. D.	P. M. Burdett, Hopetoun
1139	Winmore Cedarville	A. D.	J. McKee and Sons, Clarendon
858	Winsome Banker..	A. D.	H. Redford, Nurcoung
947	Winsome Favourite	A. D.	P. J. Darrigan, Colbinabbin East
883	Wizard Brooks ..	A. P.	N. R. Croxford, Warrenbayne
653	Woburn Craig Robin	3 D.	R. Barron, Toolamba
464	Wodilla Pride ..	5 D.	E. S. Whitehead, Cudgewa
728	Wodonna Flash Laddie	3 D.	G. A. McNabb and Son, Irrewillipe
736	Wonder Lee ..	4 L.	J. G. Downie, Ripplebrook
197	Woodbank Duplex	6 D.	A. D. Keir, Melbourne
375	Woodbank Imperial	5 D.	W. G. Ballintine, Cosgrove
1237	Woodbank Speciality	4 D.	J. H. Glenn, Tylden
1391	Woodhack ..	A. T.	P. A. Sinnott, Maffra
1072	Woodhurst Warrior	A. D.	G. R. Hildebrand, Leitchville
168	Woodland's Favourite	A. D.	G. W. Burrows, Scotsdale, Tas.
586	Woodlawn Stamp	A. D.	Petrass Bros., Kewell
857	Woodlea Jock ..	6 D.	T. Moroney, Barnedown
1350	Woodlea John Dewar	A. D.	W. and L. Oliver, Diggora West
831	Woodlea Mac ..	A. D.	C. R. McKenzie, Cressy
387	Woodview Glen ..	5 D.	F. Stillard, Barooga
815	Woolamai Banker	6 D.	I. Black, Mt. Noorat
365	Woorilla Craig ..	4 D.	J. H. McDonald, Rochester
315	Worawingeth Black Slade	6 D.	A. T. Leishman, Kingston
311	Worthy Footprint	A. D.	W. G. Ballintine, Cosgrove
1018	Worthy Prince ..	A. D.	W. S. Powles, Arcadia
554	Wunnamurra All Gay	3 D.	Perkins Bros., Rainbow
781	Wunnamurra Everlasting	3 D.	R. Haywood, Piangil
1437	Wunnamurra Flash Baron	A. D.	A. C. Jorgenson, Katyil
99	Wunnamurra Imprint	A. D.	H. S. Nottle, Netherby
1280	Yarra Pride ..	6 D.	J. T. Bell, Yarra Glen
856	Young Baron Royal	A. D.	J. G. Mengler, Walpeup
877	Young Caesar ..	A. P.	L. R. Brindley, Guy's Forest
243	Young Degree ..	A. D.	L. Greenbank, Snake Valley
807	Young Ki Ki ..	A. P.	J. W. Robertson, Macarthur
1069	Young Lymney Champion	A. D.	W. H. Penaluna, Boolarra
1315	Young Morocco ..	A. D.	R. M. Smith, Landsborough
606	Young Onward ..	4 D.	M. and A. Fleming, King Valley
1377	Young Surrydale..	5 D.	S. Hancock, Poowong South
1231	Yultewirra	A. T.	C. A. Chisholm, Khancoban
1317	Zone Time ..	A. D.	A. Hamilton, Corryong
106	Zoroaster ..	A. T.	R. G. Ritchie, Mansfield

* *Note.*—Age in years. A., aged; D., draught; L., light P., pony; T., thoroughbred.

REGISTRATION REFUSED

List of Stallions in respect of which Certificates of Registration have been refused but which, the owners having paid the prescribed fee, may be retained for breeding purposes with owner's own mares.

Name.	Age* and Class.	Owner and Address.
Unnamed	A. D.	A. C. Brain, Curyo
Unnamed	A. L.	Max Cole, Kooreh
Unnamed	A. L.	Naughton Bros., Omeo
Unnamed	A. L.	R. P. Nicol, Yarram
Unnamed	4 P.	Miss G. Small, Ferntree Gully
Admiral Break Knot	4 D.	N. Lloyd, Long Plain
Alert	A. L.	S. B. Coghill, Tallangatta
Alto Bells	A. P.	J. Barty, Redesdale
Argyle Favour	4 D.	McLean and J. F. Harrington, Tempy
Aringa Bold	5 D.	Mrs. F. Tilley, "Aringa," Port Fairy
Barfold	A. D.	N. J. Hanrahan, Barfold
Barney Baron Belmont	6 D.	A. T. Cole, Wodonga
Baron Bold	5 D.	J. N. Williamson, Detpa
Baron Christie	4 D.	T. Nunan, Nowie North
Baron Clyde	5 D.	P. W. Sloan, Ultima
Baron of Tara	A. D.	M. Coonan, Yea
Baron O. G.	A. D.	L. J. Vine, Ouyen
Baron Prince	6 D.	Geo. Tyler, Box 65, Sale
Bell Boy	A. T.	A. G. Turnbull, Coleraine
Bell Boy	A. D.	H. F. Goldsmith, Corack
Bellman	5 D.	H. Wharton and Bros., Cochrane's Creek
Benambra	A. D.	Nankervis Bros., Corryong
Ben Kell Reflect	5 D.	N. R. Ralston, Moglonemby
Black Arbuckle	A. D.	G. A. Liersch, Homecroft
Black Baron	5 D.	A. E. Tucker, Mitchell's Hill
Black Star	4 L.	D. Madill, Koyuga South
Blue North	A. D.	C. Brownlaw, Carwarp
Bold Donald	5 D.	Nunn Bros., Tungamah
Bonnie Clyde	5 D.	Mrs. E. A. Storer, Manangatang
Bowler	4 D.	A. C. Masters, Corryong
Brockleigh Prince	5 D.	S. J. Orton, Moe
Bruiser	A. D.	Smith Bros., Nullawil
Buchylyvie Again	A. D.	J. H. and W. Oldfield, Nhill
Buonaparte	A. D.	W. J. Soutter, Benambra
Campaspe Prince	A. D.	Geo. P. Starke, Kyneton
Cannie Shanter	6 P.	W. Ramsay, Winchelsea
Captain	6 D.	W. Walton, Windermere
Captain Craig	5 D.	R. N. Ronalds, Birchip
Carmyle II.	5 D.	H. Games, Yannathan
Carmyle II.	5 D.	R. J. Pigott, Tyers
Carngham Flash Baron	A. D.	T. A. Heard, Noradjuha
Clan MacKenzie	A D.	J. Purdie, Wunghnu
Clem Junior	A. P.	N. Cole, Camperdown
Clyde	5 D.	Geo. Thomson, Kilcunda
Comedy Boy	A. L.	J. A. McEachern, Nelson
Count Douglas	A. D.	C. A. Lawrance, Apsley
Craigie Don	A. D.	C. Butcher, Chillingollah
Craigie Lad	A. D.	J. Mayberry, Warracknabeal
Craig Lea	5 D.	P. Halliday, Gelliondale
Dandy Bell	A. L.	H. Spice, Bacchus Marsh
Dignity's Choice	6 D.	W. K. Collins, Lillimur
Dollarburn King	4 D.	E. R. Hopkins, Yinnar
Don	6 D.	A. R. Phillip, Bannerton
Donald	6 D.	E. Hickey, Cocamba
Donald	A. D.	Snart Bros., Gooramadda
Donibristle II.	A. D.	M. I. Wilson, Milawa
Douglas	6 D.	J. A. McDonald, Gre Gre Central
Drummer	A. D.	F. Bird, jun., Yarram
Duke of Kinarla	6 D.	Beacon Bros., Boyeo
Dunsmore	A. D.	J. J. Lawless, Burramine South
Dunure Viceroy	4 D.	T. G. Hounsell, Jeparit
East Lynne	4 D.	J. Gibson, Benambra
Ethalldale Scotson	3 D.	H. H. T. Kramer, Lawloit
Feather View Prince Stewart	6 D.	F. R. T. Coles, Kiata
Fifeness Flash Baron	5 D.	H. L. Treasure, Stratford
Fish Creek Baron	A. D.	J. J. Machin, Fish Creek
Flash Direct	A. L.	C. T. Evans, Rathscar
Flash King	A. D.	D. Bryce, Narraport
Giffard Lad	A. D.	H. T. Shields, Giffard West
Glenboola Laddie	4 D.	L. N. Thompson, Congupna
Glen Gonner	A. D.	Jas. McGregor, Tunart
Glen McBride	A. D.	H. Jager, Swan Hill
Grampian's Favourite	6 D.	J. Whiting, Terang
Hector Lee	A. D.	J. S. Carlyon, Wahring
Highland Boy	6 D.	J. J. Carmody, Leongatha
Hill King	A. L.	A. E. Cummings, Berrimal
Huonson II.	A. L.	W. Marke, Girgarre East
Ideal Ambassador	A. D.	C. J. Liesfield, Rainbow
Ideal Supreme	6 D.	T. Parker, Pepper's Plains
Ike	A. D.	Jas. Matthews and Sons, Capel's Crossing
Ivo	6 D.	J. M. Carroll, Mudgegonga
Jerry	5 D.	H. Williamson, Whorouly East
John Henry	A. L.	Messrs. Raymond and Rankin, St. Albans
Kawaran Liston Craig	5 D.	V. O. Frost, Netherby
Kawaran Strathwell	4 D.	G. T. Deckert, Kinimakatka
Keayang	5 D.	Jas. Blain, Dixie
Kelso Duke	6 D.	Melbourne and Metropolitan Board of Works, Melbourne
Kimberley Flash Lad	4 D.	O. W. Deckert, Nhill
Kingsford	5 D.	N. Clemens, Myrtleford
Korongah Bold Eric	A. D.	W. R. Hines, Donald
Larrikan	A. P.	J. C. McDonald, Casterton
Lehmanni Baron Blue	4 D.	R. Kerr, Cobrico
Lieutenant William	6 D.	Smith Bros., Echuca
Linkwood Prince	A. D.	V. S. Holt, Kurraca West
Lock	A. D.	G. T. Croxford, Benalla
Lord Roberts	A. D.	R. Wight, Woodside
Lord Victor	A. D.	J. Montgomery, Milawa
Major	5 D.	V. Rupp, Nhill
Major Laddie	A. D.	G. R. Stratton, Echuca
Maori Chief	5 D.	J. M. Walton, St. Arnaud
Master Dale Bellmond	5 D.	A. C. Bell, Walpeup
Maxmay	A. D.	D. S. Stewart, Swan Hill
Melrock Dalmore	A. D.	J. Wallsgott, Beulah
Mercury	6 T.	O. B. Brown, Cope Cope
Moiradale Sunny Boy	3 D.	A. E. Harris, Tyntynder South
Naldera Footprint	4 D.	Mrs. S. E. Kent, Sheep Hills
New Banks	4 D.	W. J. Pike, Nullawarre
Newton	A. D.	Chas. Savage, Cobden
Noble	A. D.	E. Crowe, Tatong
Norwood Prince	5 D.	C. H. Roediger, Lorquon
Ondit	A. D.	Executors of the Estate of the late N. Thornley, Hawkesdale
Patrician Prince	A. D.	J. Cullen, Mortlake
Pete	A. P.	J. Knight, Goornong
Peter	6 D.	J. W. Robinson, Clunes
Pettadale's Pride	A. D.	D. Green, jun., Nullawil
Pride of Flashbaron	5 D.	G. Kellett, Woodend
Pride of Rosebank	A. D.	C. W. Koch, Casterton
Pride of the Hills	A. D.	J. F. Edebohls, Narre Warren
Pride of Woomelang	A. D.	Estate of J. A. Kelly, Woomelang
Prince	6 D.	C. A. Eggleston, Porepunkah
Prince	5 D.	F. Justin, Camperdown
Prince	A. D.	A. H. Fawson, Bairnsdale
Prince	4 D.	R. A. Estoppey, Briagolong
Prince	A. D.	M. Findlay, Mincha
Prince Balmain	3 D.	G. Barton, Piangil
Prince Imperial	A. D.	A. McKee, Nandaly
Prince Lebbens	6 D.	R. J. Mordon, Nathalia
Prince Raven	A. D.	A. McGarry, Nyarrin
Prince's Prize	A. D.	Moran Bros., Bullaharre
Prooinga	6 D.	Malook Singh, Manangatang
Punch	A. D.	W. Earl, Woodside
Punch	A. D.	J. Sansom, Bayles
Punch	A. L.	A. Churchill, Kilcunda
Pyjamas	4 P.	Boyd Bros., Koroit
Quality Swell	A. D.	C. R. Taylor, Allansford
Radiant Crown	A. D.	A. F. Kruger, Rainbow
Robin	A. D.	A. A. Drendel, Ouyen
Robin	A. D.	H. L. Treasure, Stratford
Robin Lea	5 D.	J. and W. Bradshaw, Skipton
Rob Roy	A. P.	Miss E. A. Small, 67 The Boulevard, Hawthorn
Roe Park Bold Print	4 D.	W. R. P. Hooper, Mickleham

* *Note.*—Age in years. A., aged; D., draught L., light; P., pony T., thoroughbred

STALLION REGISTER 1938–39—*continued.*

Name.	Age* and Class.	Owner and Address.
Rowdy	A. D.	R. White, Elmore
Royal Coast Guard ..	A. D.	A. J. Muller, Hopevale
Royal Douglas ..	4 D.	H. V. Christie, Patchewollock
Royal Hero	A. D.	Mrs. P. E. Etherton, Broughton
Royal King	A. D.	D. Gorman, Crossley
Royal Mattie	5 D.	J. Kelson, Kirkstall
Sailor..	A. D.	A. G. Turnbull, Coleraine
Sam	A. D.	A. G. Turnbull, Coleraine
Scotch Pride	5 D.	J. M. Shelton, Kurraca West
Scotland's Duke ..	A. D.	H. F. Quirk, Brim
Scottie	5 D.	M. McGillivray, Bald Rock
Scottish Master ..	A. D.	R. P. Nicol, Yarram
Silver..	A. L.	H. B. and F. A. Birch, Tabberabbera
Sir Michael	A. D.	E. Lewis, Tatong
Sordino	A. T.	L. Matthews, Benambra
Sunnyland's Crystal ..	6 D.	Evans Bros., Moyhu
Sunset Trail	A. T.	Manager Yarraberb Estate, Raywood
Tess's Son	5 L.	S. A. Greaves, Narre Warren
The Grafter	A. L.	G. Phelan, Corop
The Major	A. P.	L. C. Mortimer, Leneva
Tiger	A. D.	Executors of the Estate of the late J. L. Morrison, Boinka
Victoria Masterpiece ..	A. D.	N. R. Croxford, Warrenbayne
Waldaira's King Knight	A. D.	Boyd Bros., Koroit
Wallace Dale	A. D.	E. J. Raymond, Rawnack
Warrangee Oswald ..	A. D.	Geo. Lord, Eskdale
Whirl's Derby ..	A. L.	A. Beattie, Katandra
White Flash	A. P.	H. Buxton, Stradbroke
Widgiewa Alverton ..	A. D.	J. O'Leary, Glenormiston South
Wilma Royal Stewart ..	A. D.	J. B. Fuller, Dumbalk North
Wunnamarra Tally ..	A. D.	H. E. Powell, Areegra
Yangery Prince ..	A. D.	A. Skilbeck, Southern Cross
Yarraman	A. D.	L. G. Williams, Nyah
Young Lockland ..	4 D.	C. C. Jenkins, Hopetoun
Young Toby	A. D.	W. J. Newton, Bridgewater

* *Note.*—Age in years. A., aged; D., draught; L., light; P., pony T., thoroughbred.

Stallion Parades

Time Table, 1939

Provided that the applications for registration received indicate that one horse or more will be in attendance there for examination, a parade will be held at each of the following places.

Horses submitted for examination must have had such training that the Examining Veterinary Officer may with safety handle their legs; further, the legs of every animal should be in a thoroughly clean condition.

No. and Date.	Parade.	Time.	Officer Arrives.	Officer Departs.
Every Saturday from July 1 to December 16	Police Depot Stables, corner of St. Kilda-road and Grant-street, South Melbourne	10 a.m.		
No. 1.				
Tuesday, July 4 ..	Antwerp Railway Station ..	9 a.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Tarranyurk Railway Station ..	9.30 a.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Jeparit Show Grounds	10.30 a.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Lorquon Railway Station ..	12 noon ..	Driving ..	Driving
Tuesday, July 4 ..	Netherby Railway Station ..	1 p.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Yanac Railway Station	3 p.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Broughton	4 p.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Serviceton	9 a.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Kaniva, Commercial Hotel ..	10 a.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Miram, on Western Highway ..	11.30 a.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Tarranginnie, on Western Highway	12 noon ..	Driving ..	Driving
Wednesday, July 5 ..	Nhill Show Grounds	2 p.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Salisbury	3.30 p.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Gerang Gerung Railway Station ..	4.30 p.m. ..	Driving ..	Driving
Thursday, July 6 ..	Dimboola Show Grounds ..	9 a.m. ..	Driving ..	12.50 p.m.
No. 2.				
Tuesday, July 4 ..	Natimuk Railway Station ..	10 a.m. ..	5.5 p.m. (3rd) ..	11.20 a.m.
Tuesday, July 4 ..	Gymbowen Railway Station ..	1 p.m. ..	1 p.m. ..	Driving
Tuesday, July 4 ..	Goroke Hotel	1.30 p.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Booroopki Post Office	2.30 p.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Horsham, Young Bros.' Sale Yards	8 a.m. ..	8.50 p.m. (4th)..	1.38 p.m.
Wednesday, July 5 ..	Glenorchy Railway Station ..	2.53 p.m. ..	2.53 p.m. ..	Driving
Wednesday, July 5 ..	Stawell, L. Dalziel's Stables ..	4 p.m. ..	Driving ..	8.20 p.m.
Thursday, July 6 ..	Ararat Railway Station ..	9.30 a.m. ..	9.25 p.m. (5th)..	10.13 a.m.
Thursday, July 6 ..	Wallace Railway Station ..	1 p.m. ..	Driving ..	Driving
Thursday, July 6 ..	Ballan Railway Station ..	2 p.m. ..	Driving ..	Driving
Thursday, July 6 ..	Bacchus Marsh, Border Inn Hotel	3 p.m. ..	Driving ..	Driving
Thursday, July 6 ..	Melton Railway Station ..	4 p.m. ..	Driving ..	Driving
No. 3.				
Monday, July 3 ..	Koroit, Koroit Hotel	9.30 a.m. ..	Driving ..	Driving
Monday, July 3 ..	Hawkesdale Hotel	11 a.m. ..	Driving ..	Driving
Monday, July 3 ..	Penshurst Police Station ..	12.30 p.m. ..	Driving ..	Driving
Monday, July 3 ..	Hamilton Police Station ..	2.30 p.m. ..	Driving ..	Driving
Monday, July 3 ..	Cavendish Hotel	4 p.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Balmoral Hotel	9 a.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Harrow, Hermitage Hotel ..	10 a.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Edenhope Sale Yards	11.30 a.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Apsley Post Office	12.30 p.m. ..	Driving ..	Driving
Tuesday, Julv 4 ..	Coleraine, Coleraine Hotel ..	3.30 p.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Casterton, Albion Hotel ..	9 a.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Merino, Commercial Hotel ..	10.30 a.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Branxholme Railway Station ..	12 noon ..	Driving ..	Driving
Wednesday, July 5 ..	Macarthur Post Office	1.30 p.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Condah Hotel	2.30 p.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Heywood Railway Station ..	4 p.m. ..	Driving ..	Driving
Thursday, July 6 ..	Portland Post Office	9 a.m. ..	Driving ..	Driving
Thursday, July 6 ..	Tyrendarra East Post Office ..	10.30 a.m. ..	Driving ..	Driving
Thursday, July 6 ..	Yambuk Post Office	11.15 a.m. ..	Driving ..	Driving

STALLION PARADES, TIME TABLE—*continued.*

No. and Date.	Parade.	Time.	Officer Arrives.	Officer Departs.
No. 3.				
Thursday, July 6 ..	Port Fairy, Star of the West Hotel	12.30 p.m. ..	Driving ..	Driving
Thursday, July 6 ..	Warrnambool Police Station ..	2 p.m. ..	Driving ..	Driving
No. 4.				
Monday, July 3 ..	Goorambat Railway Station ..	8.20 a.m. ..	Driving ..	Driving
Monday, July 3 ..	Devenish Railway Station ..	9 a.m. ..	Driving ..	Driving
Monday, July 3 ..	St. James Railway Station ..	9.15 a.m. ..	Driving ..	Driving
Monday, July 3 ..	Tungamah Railway Station ..	9.50 a.m. ..	Driving ..	Driving
Monday, July 3 ..	Yarrawonga Railway Station ..	10.45 a.m. ..	Driving ..	Driving
Monday, July 3 ..	Bundalong	11.30 a.m. ..	Driving ..	Driving
Monday, July 3 ..	Rutherglen Show Grounds ..	12.50 p.m. ..	Driving ..	Driving
Monday, July 3 ..	Wahgunyah Railway Station ..	1.45 p.m. ..	Driving ..	Driving
Monday, July 3 ..	Springhurst Railway Station ..	3.45 p.m. ..	Driving ..	Driving
Monday, July 3 ..	Chiltern Railway Station ..	4.15 p.m. ..	Driving ..	Driving
Monday, July 3 ..	Barnawartha Railway Station ..	4.30 p.m. ..	Driving ..	Driving
Monday, July 3 ..	Wodonga Railway Station ..	9 a.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Huon Railway Station	10.15 a.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Eskdale Hotel	11.30 a.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Tallangatta Railway Station ..	1.30 p.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Cudgewa Hotel	4.30 p.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Corryong, Court House Hotel ..	9 a.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Towong Post Office	9.30 a.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Tintaldra Hotel	10 a.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Walwa Hotel	11 a.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Burrowye Homestead Gate ..	11.40 a.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Granya Hotel	12.15 p.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Yackandandah, Y'dandah Hotel ..	2.45 p.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Beechworth, Tanswell's Hotel ..	3.15 p.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Bright, Star Hotel	9 a.m. ..	Driving ..	Driving
Thursday, July 6 ..	Myrtleford Railway Station ..	10 a.m. ..	Driving ..	Driving
Thursday, July 6 ..	Whorouly Hotel	10.50 a.m. ..	Driving ..	Driving
Thursday, July 6 ..	Milawa	11.30 a.m. ..	Driving ..	Driving
Thursday, July 6 ..	Oxley Railway Station	12 noon ..	Driving ..	Driving
Thursday, July 6 ..	Moyhu Railway Station ..	12.45 p.m. ..	Driving ..	Driving
Thursday, July 6 ..	Wangaratta Show Grounds ..	2. p.m. ..	Driving ..	Driving
Friday, July 7 ..	Benalla Railway Station ..	10 a.m. ..	Driving ..	Driving
No. 5.				
Monday, July 3 ..	Maryborough Railway Station ..	2 p.m. ..	12.25 p.m. ..	11.33 p.m.
Monday, July 3 ..	Avoca Railway Station	4 p.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Mildura Railway Station ..	8.30 a.m. ..	7 a.m. ..	Driving
Tuesday, July 4 ..	Redcliffs Railway Station ..	9.15 a.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Carwarp Railway Station ..	10 a.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Nowingi Railway Station ..	10.30 a.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Hattah Road Junction	11.30 a.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Trinita Railway Station	12 noon ..	Driving ..	Driving
Tuesday, July 4 ..	Kiamal Railway Station ..	12.15 p.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Ouyen Show Grounds	1.30 p.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Galah Railway Station	3.15 p.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Walpeup Railway Station ..	4 p.m. ..	Driving ..	Driving
Tuesday, July 4 ..	Torrita Railway Station ..	9 a.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Underbool Railway Station ..	9.30 a.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Linga Railway Station	10.15 a.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Boinka Railway Station ..	11 a.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Tutye Railway Station	11.45 a.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Cowangie Railway Station ..	12.15 p.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Danyo Railway Station ..	1.15 p.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Murrayville Railway Station ..	2 p.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Carina Railway Station ..	2.45 p.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Panitya Railway Station ..	4 p.m. ..	Driving ..	Driving
Wednesday, July 5 ..	Morkalla Railway Station ..	11 a.m. ..	Driving ..	Driving
Thursday, July 6 ..	Karween Railway Station ..	11.30 a.m. ..	Driving ..	Driving
Thursday, July 6 ..	Meringur Railway Station ..	12 noon ..	Driving ..	Driving
Thursday, July 6 ..	Bambill Railway Station ..	1.45 p.m. ..	Driving ..	Driving
Thursday, July 6 ..	Werrimull Railway Station ..	2.30 p.m. ..	Driving ..	Driving
Thursday, July 6 ..	Karawinna Railway Station ..	3 p.m. ..	Driving ..	Driving
Thursday, July 6 ..	Merrinee Railway Station ..	3.30 p.m. ..	Driving ..	Driving

STALLION PARADES, TIME TABLE—*continued.*

No. and Date.	Parade.	Time.	Officer Arrives.	Officer Departs.
No. 5.				
Thursday, July 6	Murray Valley-road and Merrinee-road Junction	4 p.m.	Driving	Driving
Thursday, July 6	Murray Valley-road and Pirlta-road Junction	4.30 p.m.	Driving	Driving
Thursday, July 6	Murray Valley-road and Benetook-road Junction	5 p.m.	Driving	Driving
No. 6.				
Monday, July 10	Baddaginnie Railway Station	9.15 a.m.	Driving	Driving
Monday, July 10	Violet Town Railway Station	9.30 a.m.	Driving	Driving
Monday, July 10	Euroa Railway Station	10 a.m.	Driving	Driving
Monday, July 10	Longwood Railway Station	11 a.m.	Driving	Driving
Monday, July 10	Avenel Hotel	11.30 a.m.	Driving	Driving
Monday, July 10	Seymour Railway Station	12 noon	Driving	Driving
Monday, July 10	Nagambie, Hill and Co.'s Sale Yards	1.30 p.m.	Driving	Driving
Monday, July 10	Murchison East Railway Station	2.30 p.m.	Driving	Driving
Monday, July 10	Rushworth Railway Station	3.45 p.m.	Driving	Driving
Monday, July 10	Colbinabbin, Hotel	4.15 p.m.	Driving	Driving
Tuesday, July 11	Stanhope Railway Station	9.30 a.m.	Driving	Driving
Tuesday, July 11	Girgarre Railway Station	10.15 a.m.	Driving	Driving
Tuesday, July 11	Tongala Hotel	11 a.m.	Driving	Driving
Tuesday July 11	Kyabram Railway Station	12 noon	Driving	Driving
Tuesday, July 11	Lancaster State School	1.15 p.m.	Driving	Driving
Tuesday, July 11	Merrigum Railway Station	1.45 p.m.	Driving	Driving
Tuesday, July 11	Tatura Show Grounds	3 p.m.	Driving	Driving
Wednesday, July 12	Shepparton Show Grounds	8.45 a.m.	Driving	Driving
Wednesday, July 12	Congupna-road Railway Station	10 a.m.	Driving	Driving
Wednesday, July 12	Tallygaroopna Railway Station	10.30 a.m.	Driving	Driving
Wednesday, July 12	Numurkah, Shamrock Hotel	11 a.m.	Driving	Driving
Wednesday, July 12	Waaia Railway Station	1 p.m.	Driving	Driving
Wednesday, July 12	Nathalia Railway Station	2.15 p.m.	Driving	Driving
Wednesday, July 12	Picola Railway Station	2.45 p.m.	Driving	Driving
Wednesday, July 12	Strathmerton Railway Station	4.30 p.m.	Driving	Driving
Thursday, July 13	Cobram Railway Station	9 a.m.	Driving	Driving
Thursday, July 13	Katamatite Railway Station	10.30 a.m.	Driving	Driving
Thursday, July 13	Yabba North Railway Station	11.15 a.m.	Driving	Driving
Thursday, July 13	Katandra—Cemetery	11.45 a.m.	Driving	Driving
Thursday, July 13	Dookie Hotel	12.30 p.m.	Driving	Driving
Thursday, July 13	Pine Lodge Methodist Church	2 p.m.	Driving	Driving
Friday, July 14	Mansfield, Delatite Hotel	10 a.m.	Driving	Driving
Friday, July 14	Bonnie Doon Railway Station	11 a.m.	Driving	Driving
Friday, July 14	Merton Railway Station	11.30 a.m.	Driving	Driving
Friday, July 14	Yarck Railway Station	12 noon	Driving	Driving
Friday, July 14	Alexandra Police Station	1.30 p.m.	Driving	Driving
Friday, July 14	Molesworth Railway Station	2.30 p.m.	Driving	Driving
Friday, July 14	Yea Railway Station	3 p.m.	Driving	Driving
No. 7.				
Monday, July 10	Allansford Hotel	9.15 a.m.	Driving	Driving
Monday, July 10	Panmure Hotel	9.45 a.m.	Driving	Driving
Monday, July 10	Terang, Dalgety's Yards	10.30 a.m.	Driving	Driving
Monday, July 10	Noorat Hotel	11 a.m.	Driving	Driving
Monday, July 10	Timboon Hotel	1 p.m.	Driving	Driving
Monday, July 10	Cobden Police Station	2 p.m.	Driving	Driving
Monday, July 10	Camperdown, Dalgety's Yards	2. 30 p.m.	Driving	Driving
Monday, July 10	Pomborneit North, Post Office	3.15 p.m.	Driving	Driving
Monday, July 10	Pirron Yallock, Blacksmith's Shop	3.45 p.m.	Driving	Driving
Tuesday, July 11	Warncoort Railway Station	9 a.m.	Driving	Driving
Tuesday, July 11	Birregurra Railway Station	9.30 a.m.	Driving	Driving
Tuesday, July 11	Winchelsea Railway Station	10.15 a.m.	Driving	Driving
Tuesday, July 11	Colac, Johnstone's Yards	11.30 a.m.	Driving	Driving
Tuesday, July 11	Beeac Post Office	1.30 p.m.	Driving	Driving
Tuesday, July 11	Cressy, Frenchman's Inn	2.15 p.m.	Driving	Driving
Tuesday, July 11	Berrybank School	3 p.m.	Driving	Driving
Tuesday, July 11	Lismore Hotel	4 p.m.	Driving	Driving
Wednesday, July 12	Derrinallum Post Office	9.30 a.m.	Driving	Driving
Wednesday, July 12	Vite Vite Railway Station	10 a.m.	Driving	Driving

STALLION PARADES, TIME TABLE—*continued.*

No. and Date.	Parade.	Time.	Officer Arrives.	Officer Departs.
No. 7.				
Wednesday, July 12 ..	Westmere Railway Station ..	12 noon ..	Driving ..	Driving
Wednesday, July 12 ..	Tatyoon Railway Station ..	2 p.m. ..	Driving ..	Driving
Wednesday, July 12 ..	Maroona Hotel	3 p.m. ..	Driving ..	Driving
Wednesday, July 12 ..	Willaura Railway Station ..	4 p.m. ..	Driving ..	Driving
Thursday, July 13 ..	Glenthompson Railway Station ..	9.30 a.m. ..	Driving ..	Driving
Thursday, July 13 ..	Wickliffe Post Office	10.30 a.m. ..	Driving ..	Driving
Thursday, July 13 ..	Lake Bolac, Hotel	11 a.m. ..	Driving ..	Driving
Thursday, July 13 ..	Woorndoo Post Office	12 noon ..	Driving ..	Driving
Thursday, July 13 ..	Mortlake, Mt. Shadwell Hotel ..	1.30 p.m. ..	Driving ..	Driving
Thursday, July 13 ..	Hexham Post Office	2.30 p.m. ..	Driving ..	Driving
Thursday, July 13 ..	Woolsthorpe Post Office ..	4 p.m. ..	Driving ..	Driving
No. 8.				
Monday, July 10 ..	Goornong Railway Station ..	9.30 a.m. ..	Driving ..	Driving
Monday, July 10 ..	Elmore, Railway Hotel	10.30 a.m. ..	Driving ..	Driving
Monday, July 10 ..	Rochester Show Grounds ..	11.30 a.m. ..	Driving ..	Driving
Monday, July 10 ..	Lockington Railway Station ..	1.30 p.m. ..	Driving ..	Driving
Monday, July 10 ..	Echuca Railway Station ..	3 p.m. ..	Driving ..	Driving
Tuesday, July 11 ..	Torumbarry Post Office ..	10 a.m. ..	Driving ..	Driving
Tuesday, July 11 ..	Gunbower Hotel	10.30 a.m. ..	Driving ..	Driving
Tuesday, July 11 ..	Leitchville Hotel	11.15 a.m. ..	Driving ..	Driving
Tuesday, July 11 ..	Cohuna Show Grounds	1 p.m. ..	Driving ..	Driving
Tuesday, July 11 ..	Pyramid, Victoria Hotel ..	3 p.m. ..	Driving ..	Driving
Wednesday, July 12 ..	Durham Ox	9.30 a.m. ..	Driving ..	Driving
Wednesday, July 12 ..	Mysia Railway Station	10.30 a.m. ..	Driving ..	Driving
Wednesday, July 12 ..	Boort Railway Station	11 a.m. ..	Driving ..	Driving
Wednesday, July 12 ..	Barraport Railway Station ..	1 p.m. ..	Driving ..	Driving
Wednesday, July 12 ..	Gredgwin Railway Station ..	1.30 p.m. ..	Driving ..	Driving
Wednesday, July 12 ..	Quambatook Hotel	3 p.m. ..	Driving ..	Driving
Thursday, July 13 ..	Jarklan, Hotel	10.15 a.m. ..	Driving ..	Driving
Thursday, July 13 ..	Mologa Railway Station ..	11 a.m. ..	Driving ..	Driving
Thursday, July 13 ..	Mitiamo Railway Station ..	12 noon ..	Driving ..	Driving
Thursday, July 13 ..	Prairie Railway Station ..	1.30 p.m. ..	Driving ..	Driving
Thursday, July 13 ..	Dingee Railway Station ..	2 p.m. ..	Driving ..	Driving
Thursday, July 13 ..	Tandarra Railway Station ..	2.30 p.m. ..	Driving ..	Driving
Thursday, July 13 ..	Raywood Railway Station ..	3 p.m. ..	Driving ..	Driving
No. 9.				
Monday, July 10 ..	Murtea Railway Station ..	3.9 p.m. ..	3.9 p.m. ..	Driving
Monday, July 10 ..	Jung Railway Station	3.30 p.m. ..	Driving ..	Driving
Monday, July 10 ..	Kewell	4.15 p.m. ..	Driving ..	Driving
Tuesday, July 11 ..	Marnoo Railway Station ..	10 a.m. ..	Driving ..	Driving
Tuesday, July 11 ..	Burrum—on Marnoo Road ..	11 a.m. ..	Driving ..	Driving
Tuesday, July 11 ..	Rupanyup Railway Station ..	12 noon ..	Driving ..	Driving
Tuesday, July 11 ..	Minyip, Club Hotel	2 p.m. ..	Driving ..	4.9 p.m.
Wednesday, July 12 ..	Hopetoun Show Grounds ..	9 a.m. ..	10.45 p.m. (11th)	Driving
Wednesday, July 12 ..	Yaapeet Railway Station ..	12 noon ..	Driving ..	Driving
Wednesday, July 12 ..	Rainbow, Commonwealth Hotel ..	1 p.m. ..	Driving ..	Driving
Wednesday, July 12 ..	Kenmare	4 p.m. ..	Driving ..	Driving
Thursday, July 13 ..	Beulah Show Grounds	9 a.m. ..	Driving ..	Driving
Thursday, July 13 ..	Galaquil Railway Station ..	10.30 a.m. ..	Driving ..	Driving
Thursday, July 13 ..	Brim Railway Station	11 a.m. ..	Driving ..	Driving
Thursday, July 13 ..	Lah Railway Station	11.30 a.m. ..	Driving ..	Driving
Thursday, July 13 ..	Warracknabeal, Commercial Hotel	2 p.m. ..	Driving ..	4 p.m.
No. 10.				
Monday, July 10 ..	St. Arnaud Show Grounds ..	2.15 p.m. ..	2.6 p.m. ..	Driving
Monday, July 10 ..	Cope Cope Railway Station ..	4.30 p.m. ..	Driving ..	Driving
Tuesday, July 11 ..	Donald Show Grounds	9 a.m. ..	Driving ..	Driving
Tuesday, July 11 ..	Watchem Hotel	12 noon ..	Driving ..	Driving
Tuesday, July 11 ..	Birchip, Young and Taylor's Yards	2.30 p.m. ..	Driving ..	Driving
Tuesday, July 11 ..	Curyo Railway Station	4 p.m. ..	Driving ..	Driving
Wednesday, July 12 ..	Woomelang Trucking Yards ..	9 a.m. ..	Driving ..	Driving
Wednesday, July 12 ..	Lascelles Railway Station ..	11 a.m. ..	Driving ..	Driving
Wednesday, July 12 ..	Speed Railway Station	12 noon ..	Driving ..	Driving
Wednesday, July 12 ..	Patchewollock Railway Station ..	1.30 p.m. ..	Driving ..	Driving

Stallion Parades, Time Table—*continued.*

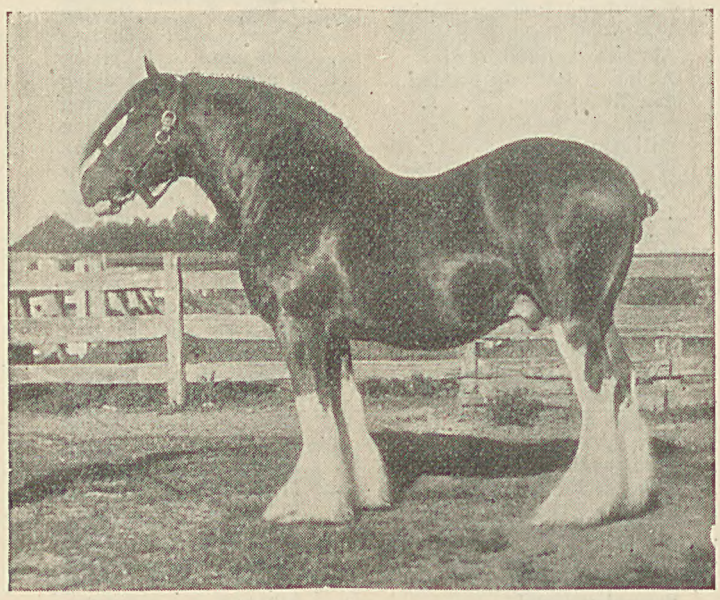
No. and Date.	Parade.	Time.	Officer Arrives.	Officer Departs.
No. 11.				
Monday, July 17 ..	Royal Show Grounds	10 a.m.		
Tuesday, July 18 ..	Royal Show Grounds	9 a.m.		
Wednesday, July 19 ..	Werribee Railway Station ..	10.15 a.m. ..	10.7 a.m. ..	11.45 a.m.
Thursday, July 20 ..	Sunbury Railway Station ..	9 a.m. ..	9 a.m. ..	9.35 a.m.
Thursday, July 20 ..	Kilmore Royal Oak Hotel ..	9 a.m. ..	8.53 a.m. ..	Driving
Thursday, July 20 ..	Mernda Railway Station ..	10.17 a.m. ..	10.17 a.m. ..	11.2 a.m.
Thursday, July 20 ..	Frankston Railway Station ..	2.56 p.m. ..	2.56 p.m. ..	3.12 p.m.
Thursday, July 20 ..	Geelong, Myers-street, Saleyards..	9.30 a.m. ..	9.17 a.m. ..	Driving
Thursday, July 20 ..	Bannockburn Railway Station ..	11 a.m. ..	Driving ..	Driving
Thursday, July 20 ..	Inverleigh, Inverleigh Hotel ..	12 noon ..	Driving ..	Driving
Thursday, July 20 ..	Lara Railway Station	1.20 p.m. ..	1.19 p.m. ..	3.50 p.m.
Friday, July 21 ..	Cranbourne Railway Station ..	9 a.m. ..	8.45 a.m. ..	10.5 a.m.
Friday, July 21 ..	Dandenong Railway Station ..	11 a.m. ..	10.20 a.m. ..	11.33 a.m.
Friday, July 21 ..	Yarra Glen, Grand Hotel ..	10 a.m. ..	9.49 a.m. ..	11.25 a.m.
Friday, July 21 ..	Lilydale Railway Station ..	11.52 a.m. ..	11.52 a.m. ..	3.1 p.m.
No. 12.				
Monday, July 24 ..	Mystic Park Railway Station ..	3.11 p.m. ..	3.11 p.m. ..	Driving
Monday, July 24 ..	Lake Boga Railway Station ..	3.45 p.m. ..	Driving ..	Driving
Monday, July 24 ..	Swan Hill Show Grounds ..	4.15 p.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Nyah West Railway Station ..	9 a.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Piangil Railway Station ..	10 a.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Kooloonong Railway Station ..	11.15 a.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Yungera Railway Station ..	11.45 a.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Bannerton Railway Station ..	12.30 p.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Margooya Railway Station ..	1 p.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Annuello Railway Station ..	2 p.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Koimbo Railway Station ..	2.45 p.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Bolton Railway Station ..	3.15 p.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Manangatang Railway Station ..	4 p.m. ..	Driving ..	Driving
Wednesday, July 26 ..	Cocamba Railway Station ..	9.30 a.m. ..	Driving ..	Driving
Wednesday, July 26 ..	Chinkapook Railway Station ..	10 a.m. ..	Driving ..	Driving
Wednesday, July 26 ..	Chillingollah Railway Station ..	11 a.m. ..	Driving ..	Driving
Wednesday, July 26 ..	Waitchie Railway Station ..	12 noon ..	Driving ..	Driving
Wednesday, July 26 ..	Gowanford Railway Station ..	12.30 p.m. ..	Driving ..	Driving
Wednesday, July 26 ..	Ultima Railway Station ..	2 p.m. ..	Driving ..	Driving
Wednesday, July 26 ..	Lalbert Railway Station ..	3 p.m. ..	Driving ..	Driving
Wednesday, July 26 ..	Goschen Hall	4 p.m. ..	Driving ..	Driving
Thursday, July 27 ..	Koondrook Hotel	10 a.m. ..	Driving ..	Driving
Thursday, July 27 ..	Kerang, Kerang Hotel	11.30 a.m. ..	Driving ..	3.23 p.m.
No. 13.				
Monday, July 24 ..	Daylesford, Commercial Hotel ..	12 noon ..	11.5 a.m. ..	2 p.m.
Monday, July 24 ..	Kingston Hotel	4.10 p.m. ..	3.58 p.m. ..	Driving
Monday, July 24 ..	Creswick Railway Station ..	4.30 p.m. ..	Driving ..	8.12 a.m. (25th)
Tuesday, July 25 ..	Ballarat Hay Market	9 a.m. ..	8.57 a.m. ..	Driving
Tuesday, July 25 ..	Learmonth Hotel	10.30 a.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Waubra Post Office	11 a.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Burrumbeet Railway Station ..	12 noon ..	Driving ..	Driving
Tuesday, July 25 ..	Trawalla Railway Station ..	1 p.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Beaufort (Skipton turn off) ..	2 p.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Skipton Post Office	3 p.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Linton Post Office	4 p.m. ..	Driving ..	Driving
Wednesday, July 26 ..	Romsey Railway Station ..	10.30 a.m. ..	10.30 a.m. ..	2.15 p.m.
No. 14.				
Monday, July 24 ..	Marong Railway Station ..	9.30 a.m. ..	Driving ..	Driving
Monday, July 24 ..	Bridgewater Railway Station ..	10.15 a.m. ..	Driving ..	Driving
Monday, July 24 ..	Inglewood Railway Station ..	11 a.m. ..	Driving ..	Driving
Monday, July 24 ..	Logan Hotel	2 p.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Wycheproof Sale Yards ..	10 a.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Nullawil Railway Station ..	11.30 a.m. ..	Driving ..	Driving
Tuesday, July 25 ..	Warne Railway Station ..	12.15 p.m. ..	Driving ..	Driving

STALLION PARADES, TIME TABLE—*continued.*

No. and Date.	Parade.	Time.	Officer Arrives.	Officer Departs.
No. 14.				
Tuesday, July 25	Culgoa Hotel	12.45 p.m.	Driving	Driving
Tuesday, July 25	Berriwillock Railway Station	2.15 p.m.	Driving	Driving
Tuesday, July 25	Sea Lake, Royal Hotel	3.30 p.m.	Driving	Driving
Wednesday, July 26	Nyarrin Railway Station	10 a.m.	Driving	Driving
Wednesday, July 26	Nandaly Railway Station	11 a.m.	Driving	Driving
Wednesday, July 26	Charlton Show Grounds	3 p.m.	Driving	Driving
Thursday, July 27	Korongvale Railway Station	10 a.m.	Driving	Driving
Thursday, July 27	Wedderburn Railway Station	10.30 a.m.	Driving	Driving
Thursday, July 27	Serpentine	1.30 p.m.	Driving	Driving
Thursday, July 27	Bendigo Show Grounds	3 p.m.	Driving	Driving
No. 15.				
Monday, July 31	Castlemaine Railway Station	9.30 a.m.	Driving	Driving
Monday, July 31	Maldon Railway Station	10.30 a.m.	Driving	Driving
Monday, July 31	Eastville	11 a.m.	Driving	Driving
Monday, July 31	Eddington Hotel	11.30 a.m.	Driving	Driving
Monday, July 31	Baringhup	1.30 p.m.	Driving	Driving
Monday, July 31	Joyce's Creek	2.30 p.m.	Driving	Driving
Monday, July 31	Newstead Railway Station	3.30 p.m.	Driving	Driving
Monday, July 31	Barfold Railway Station	9.30 a.m.	Driving	Driving
Tuesday, August 1	Redesdale Hotel	10 a.m.	Driving	Driving
Tuesday, August 1	Kyneton Show Grounds	11.30 a.m.	Driving	Driving
Tuesday, August 1	Trentham Railway Station	1.30 p.m.	Driving	Driving
Tuesday, August 1	Woodend Railway Station	3 p.m.	Driving	Driving
No. 16.				
Monday, July 31	Warragul Show Grounds	10.45 a.m.	Driving	Driving
Monday, July 31	Poowong Hotel	12 noon	Driving	Driving
Monday, July 31	Nyora Hotel	12.30 p.m.	Driving	Driving
Monday, July 31	Lang Lang Railway Station	1 p.m.	Driving	Driving
Monday, July 31	Woodleigh Railway Station	2 p.m.	Driving	Driving
Monday, July 31	Almurta Railway Station	2.30 p.m.	Driving	Driving
Monday, July 31	Anderson Railway Station	3 p.m.	Driving	Driving
Monday, July 31	San Remo Pier	3.30 p.m.	Driving	Driving
Monday, July 31	Newhaven Pier	4.30 p.m.	Driving	Driving
Monday, July 31	Dalyston Hotel	9 a.m.	Driving	Driving
Tuesday, August 1	Wonthaggi Railway Station	9.30 a.m.	Driving	Driving
Tuesday, August 1	Kongwak Butter Factory	9.45 a.m.	Driving	Driving
Tuesday, August 1	Jumbunna Hotel	10 a.m.	Driving	Driving
Tuesday, August 1	Korumburra Railway Station	11 a.m.	Driving	Driving
Tuesday, August 1	Leongatha Railway Station	12 noon	Driving	Driving
Tuesday, August 1	Meeniyan Railway Station	1.30 p.m.	Driving	Driving
Tuesday, August 1	Stony Creek Railway Station	2 p.m.	Driving	Driving
Tuesday, August 1	Fish Creek Post Office	2.30 p.m.	Driving	Driving
Tuesday, August 1	Foster, Exchange Hotel	3.15 p.m.	Driving	Driving
Tuesday, August 1	Toora Railway Station	4 p.m.	Driving	Driving
Tuesday, August 1	Welshpool Railway Station	4.30 p.m.	Driving	Driving
Tuesday, August 1	Yarram Sale Yards	9 a.m.	Driving	Driving
Wednesday, August 2	Won Wron Railway Station	10 a.m.	Driving	Driving
Wednesday, August 2	Gormandale Post Office	10.30 a.m.	Driving	Driving
Wednesday, August 2	Rosedale Railway Station	11.15 a.m.	Driving	Driving
Wednesday, August 2	Kilmany Railway Station	11.30 a.m.	Driving	Driving
Wednesday, August 2	Sale Railway Station	12.30 p.m.	Driving	Driving
Wednesday, August 2	Stratford Railway Station	1.15 p.m.	Driving	Driving
Wednesday, August 2	Bairnsdale Sale Yards	2.30 p.m.	Driving	Driving
Thursday, August 3	Benambra Hotel	9.30 a.m.	Driving	Driving
Thursday, August 3	Omeo, Golden Age Hotel	10.30 a.m.	Driving	Driving
Thursday, August 3	Tongio Homestead	11.30 a.m.	Driving	Driving
Thursday, August 3	Ensay South Hotel	12.30 p.m.	Driving	Driving
Thursday, August 3	Bruthen, Bruthen Inn	2.30 p.m.	Driving	Driving
Thursday, August 3	Buchan, River View Hotel	3.30 p.m.	Driving	Driving
Thursday, August 3	Nowa Nowa Hotel	4.30 p.m.	Driving	Driving
Thursday, August 3	Cann River, Hotel	10.30 a.m.	Driving	Driving
Friday, August 4				

STALLION PARADES, TIME TABLE—*continued.*

No. and Date.	Parade.	Time.	Officer Arrives.	Officer Departs.
No. 16.				
Friday, August 4	Club Terrace, Roadside	12 noon	Driving	Driving
Friday, August 4	Orbost, Club Hotel	3 p.m.	Driving	Driving
Saturday, August 5	Jenson's	10.30 a.m.	Driving	Driving
Saturday, August 5	Bonang Post Office	12 noon	Driving	Driving
Saturday, August 5	Lakes Entrance Club Hotel	4.30 p.m.	Driving	Driving
Monday, August 7	Maffra Railway Station	9 a.m.	Driving	Driving
Monday, August 7	Tinamba Railway Station	10 a.m.	Driving	Driving
Monday, August 7	Heyfield Railway Station	10.30 a.m.	Driving	Driving
Monday, August 7	Cowwarr Railway Station	11 a.m.	Driving	Driving
Monday, August 7	Toongabbie Railway Station	11.30 a.m.	Driving	Driving
Monday, August 7	Traralgon Railway Station	12 noon	Driving	Driving
Monday, August 7	Morwell Railway Station	2 p.m.	Driving	Driving
Monday, August 7	Moe Railway Station	3 p.m.	Driving	Driving
Monday, August 7	Trafalgar Railway Station	4 p.m.	Driving	Driving
Monday, August 7	Yarragon Railway Station	4.15 p.m.	Driving	Driving
Tuesday, August 8	Pakenham Railway Station	9 a.m.	8.4 p.m. 7th	9.28 a.m.
Tuesday, August 8	Bunyip Railway Station	10 a.m.	9.50 a.m.	11.25 a.m.
No. 17.				
Wednesday, September 20	Royal Show	10 a.m.	Driving	Driving
Thursday, September 21	Royal Show	9 a.m.	Driving	Driving



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